Manufacturers Record

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Rarin' To Go

"It would, indeed, be a brave man to forecast the outlook for 1938.

We have gone through a stampede like the cattle herds of Texas, we have been through dipping vats, branding irons have left their imprints upon our flanks, and bull-whips still sing about our heads. Though the pastures are still as green as ever, our ribs are lean. The steers, yearlings and little dogies are all atremble.

Keep the old corral gate open, let the chuck wagon with its bull-whips, leather lungers and branding iron pass through, and you'll have no worry as to what will happen.

The American herd is 'rearing' to go."

Extract from a letter to the Manufacturers Record from George Sealy, President Galveston Wharf Company

March 1938

The Story of the 16-Story "Stick" Told in Business Man's Language

Let March winds be reminders of the breezes on Long Island Sound last July and August when *Ranger,* Mr. Harold S. Vanderbilt's Class J Sloop, successfully defended the America's Cup in four straight victories.

Ranger's mast is an elliptical tube, 165 feet in length, which stands 153 feet above deck. It weighs 6170 pounds, and it is a single shell of riveted plates of strong Alloys of Alcoa Aluminum. This single stick transmits to the hull the tremendous wind forces on 7500 square feet of sail.

The weight of Ranger's mast was limited by rule. Alcoa Aluminum was used because it made the strongest mast that could be built within the weight limit.

Likewise, Alcoa Aluminum made a stiffer mast. Stiffness means straightness. Straightness makes sails "set" and "fill" more perfectly.

Ranger won her cup races with a duplicate of the first mast made for her. Number one was finally destroyed in a storm which first broke the supporting rigging, and then had to whip the unsupported Aluminum mast for 8 hours before it broke. Yachting Magazine describes this performance as "miraculous."

IT'S A LIFTABLE IDEA . . . Salient fact is that Mr. W. Starling Burgess and Mr. Olin Stephens, the designers, used Alcoa Aluminum not to save weight, but to get greatest strength for a given weight.

Lift the idea for yourself. Think not of Alcoa Aluminum only as *light* but as *strong and light.*

And think of our organization as fully prepared to help you take advantage of the latest developments in Aluminum. Aluminum Company of America, 2109 Gulf Bldg., Pittsburgh, Pa.

ALCOA

A full-color print of this illustration, without advertising text, will be sent to you for framing, upon request.

ALCOA · ALUMINUM

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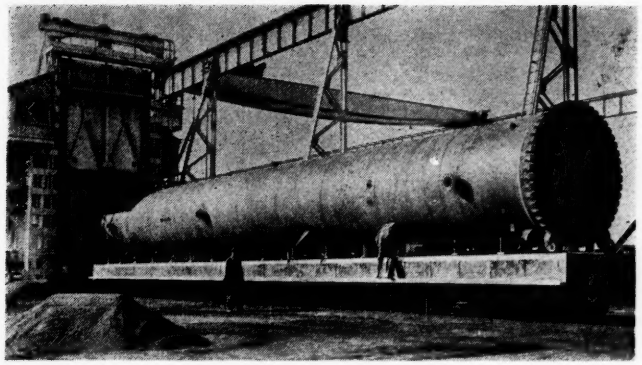

80'x8'4" creosoting cylinder built for International Creosoting & Construction Co., Texarkana, Texas, by The Chicago Bridge & Iron Co., at Birmingham, Ala.

MANUFACTURERS RECORD

Devoted to the Upbuilding of the Nation Through the Development of the South and Southwest as the Nation's Greatest Material Asset

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Member A.B.C.

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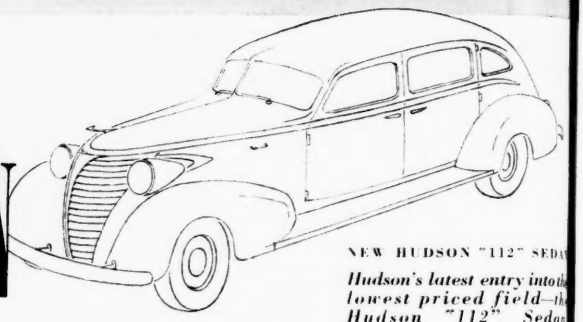
GREAT NAMES SERVED BY CARBORUNDUM...

HUDSON



NEW HUDSON "112" SEDA
Hudson's latest entry into th lowest priced field—th Hudson "112" Sedan

"The modern grinding wheels, grinding machines and methods surely play an all-important part in the production of today's automobile, including, of course, the new Hudson "112". Grinding makes possible extreme accuracy in the mass production of the moving parts of the automobile; makes possible the interchangeability of parts; and accurate grinding has eliminated vibration and reduced wear to the point of adding thousands of miles to the life of the car. In fact there are many reasons for our considering the grinding wheel as one of the indispensable tools of the automotive industry."

A. EDWARD BARIT
President and General Manager Hudson Motor Car Company

● The new Hudson "112" is born. Thousands of men are recalled to their jobs. Pay rolls increase and so do the purchases of the materials and tools used in the production of this new low price car carrying the distinguished name of Hudson.

We are proud of the fact that in the creation of this new car the abrasive products of The Carborundum Company are playing their all-important part.

Grinding wheels by Carborundum are accurately grinding the cranks and cams, axle shafts and bearings, cylinders and valves—grinding and finishing dozens of parts to the exacting specifications that have always guided and maintained Hudson production methods and quality standards.

Even in the sanding of the bodies of the new "112" you will find the coated abrasives of The Carborundum Company giving the perfect foundation for a perfect finish.

Not only on the "112", but in the building of the other Hudson models and the famed Terraplanes as well, the abrasive products of The Carborundum Company are making possible higher production and greater accuracy through grinding.

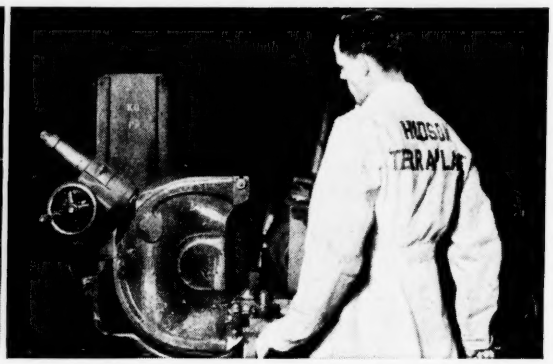
The Hudson Motor Car Company is indeed great among the many distinguished industries that we are privileged to serve.

THE CARBORUNDUM COMPANY • NIAGARA FALLS, N. Y.

REG. U.S. PAT. OFF.

(Carborundum is a registered trade-mark of The Carborundum Company)

Grinding axle I-beam trunion of the "112" with a two-wheel set-up. The wheels are Aloxite Brand Aluminum Oxide 26 x 1.250 x 12, in 366 grit, J grade.



Centerless grinding of the spline end of the drive shaft of the Hudson "112". Aloxite Brand Aluminum Oxide wheel 20 x 4 x 12, in 401 grit, J grade.

THE PLAIN PURPOSE

IN opposing the wage and hour bill the Machinery and Allied Products Institute says such a measure would "trade our ability to achieve further progress in America for a static society of low standards if not indeed retrogression." It asks "Will it not tend always toward greater and greater control by government of the cost of goods produced and must not such increasing control of cost ultimately dominate price?"

The inherent dangers in this and other New Deal laws have been repeatedly pointed out by the MANUFACTURERS RECORD.

No other conclusion can be reached as to the objective of the present government than the inescapable one that the purpose is to control prices and everything else. When the laws framed by academic theorists and enacted by a supine Congress to regulate activities of businesses and individuals are thoughtfully considered, it will be seen that the only explanation possible, and this fits them all, is to centralize control in Washington over what a man does and what he may receive for doing it. And they are in such a hurry about it under the excuse of helping the poor farmer that they passed the Farm Bill that will call, it is estimated, for a billion dollars a year—but if pinned down they will tell you they don't know how much it will cost.

Now it is proposed to spend several hundred million annually under the guise of helping out the school systems of the various states. This will prove the opening wedge to what has long been desired by loose thinkers who have been nagging at it for years and the purpose is to control education and thus strike at a tap-root of our national life.

The purpose is to dominate from Washington the course of life in America and change it over from what has made this country the land of opportunity and well being beyond anything the world has seen before to a totalitarian state in which citizens bow to the whims of satraps at Washington.

Under the Farm Bill the farmer may be controlled and likewise the basic food supply of the nation. The adoption of the Wage and Hour Bill, which is on the "must" list, means in many cases the control of the biggest item of business cost and the greatest factor in deciding selling price.

This is the world's greatest market, demanding new homes and supplies of every description and with the resources to meet virtually every need. Money is piling up and its owners are eager to invest it while they wait for a reasonable assurance of its safety. The banks report a decreasing demand for loans because business is afraid to venture and yet we have the world's biggest stock of gold, eleven billion dollars, and credit terms are easier than they have been for a long time. Notwithstanding this, we are going through what is politely termed a recession, which, if it serves no other purpose, brings out more clearly than before the folly of it all, the effect of what has been done and what is being done to stifle enterprise and the staggering cost while taxes mount and mount. There is no reason for it except complete, mishandling by a fatuous leadership intent upon control.

The demand should be incessant on members of Congress to abolish legislation that is paralyzing the country, and instead of denunciation of business, turn to an upbuilding program that will invite individual initiative and the investment of capital funds. Return to the principles which recognize the functions of federal government as far removed from the myriads of bureaus, commissions and regulatory bodies that have been established because of the wild dreams of theorists.

It is becoming clearer every day as the budget gets more out of balance and the debt grows to appalling figures, we can't go on in the present course if we are to be honest and pay our obligations.

As we see it—

Investigations

Business men who have their feet on the ground have never agreed with the dream of Senator Norris as to the practical working of any scheme like the T. V. A. Although it was said a yardstick could be provided by which to gauge power and electricity rates everywhere, this soon was shown to be impossible under T. V. A.'s financial set up which gave it capital from government and no taxes or very little to pay. This was a beautiful thought for the "more abundant life" but it couldn't work out.

In every day affairs when a corporation borrows money it must pay for it and the state, city and federal government see that it pays its share of the tax bill.

Now the Chairman of the T. V. A. Board says there have been strange goings on and he asks for a searching investigation into every phase of T. V. A.'s operations from power to fertilizer and down to marble. If what the Chairman believes is true it is time to bring the facts out in the open as to the mishandling of affairs with which he charges the two other members of the Board.

We suggest it might also be timely to ventilate down to the bottom the impossibility of running any fancy scheme of the kind represented by T. V. A. except at a cost to taxpayers of hundreds of millions. A cost in the end that might go far beyond what consumers would pay for current from private companies.

Maybe a new day has dawned. Maybe a light will be thrown into the dark places so that a lot of the silliness will be shown up. It hasn't been explained yet what sort of a program is involved in supplying fertilizer to farmers for greater production of crops while at the same time the Agricultural Department was carrying on a campaign with the same people to cut down production. Comptroller McCarl pointedly called attention to the unbusinesslike balance sheet which T. V. A. management offered to the government as an evidence of stewardship. As a business man he couldn't approve it but Congress let it go and voted more millions, and on top of that listened seriously while a proposition was being made to establish seven more T. V. A.'s.

Let's have the investigation thorough from every standpoint. We heartily agree with Dr. Morgan's request that ample funds be provided to conduct it.

Recognize Facts

Business will do well to recognize certain facts and as far as possible adjust itself to meet them.

Heavy as the load is and in spite of protests, taxes instead of being reduced will be increased. Spending is to go on. New Dealers can figure no other course. They refuse to see that Relief is altogether a matter for the states and local communities. The intelligent thought of the country knows it but the politician can't see votes coming from that course. Politicians believe in spending other people's money. They believe in keeping it up. Forty billions of debt looms as the total. What of it? Spend, spend and spend some more is their fixed policy.

Small business voices its wants and they are, in the main, the wants of all business. The gesture of inviting their views appears up to this time a gesture only. It looked good but practical results are no more likely than results which haven't come so far from numerous conferences with big business.

The money already spent and which some day must be paid means higher taxes and the increased spending will put them still higher.

The only cure for the whole mess is to keep up the protests with greater volume until the load on the major part of the population is keenly felt and votes go the other way. The politician is usually a practical man from a selfish standpoint. He can be made to see conservatism as an ideal if enough voters tell him to see it. He will even lay claim in time to come as having been always and unchangeably conservative. The sooner the line is drawn that he must toe to escape defeat the better for the country, if we are to be honest and pay the money we have borrowed.

Spend for Defense

Patriotism and love of country have not appeared very prominently in the new scheme of things of late. We have been told some of our schools have described patriotism as foolishness or an emotion without a place in the proper order of existence. Maybe they have, but self-preservation is an instinct not to be downed.

This country with 3,000 miles of coast line not only should have adequate shore defenses but its Navy and Air Force should be second to none. The efforts being made in Congress to see that this is done should meet with unanimous approval.

Even if it is believed an enemy could not successfully invade America, they could do a lot of damage along our coast in attempting it.

Military dictatorships on the other side, which are taxing their people to death, must have new sources of wealth or their schemes will collapse. From the standpoint of helping to maintain civilization in the world, which unquestionably is being endangered, this country must recognize that a possible catastrophe faces mankind. Human liberty for which the struggle has gone on for centuries is being pushed aside while men are made automatons of a State.

It must be plain that the hope rests in the united purpose of England, France and America to preserve for their people the liberty which elsewhere is being destroyed by silly dictators who throw out religion and every guiding principle except those born of their own conceit.

As we see it—

(Continued)

America will do well to make it a discouraging job for any one to approach its shores with hostile intent. This for its own sake and for the sake of mankind.

Plight of the Railroads

The railroads of the country are such an important part of our lives that we take them more or less as a matter of course. We enjoy the safety and comfort of their transportation without particular comment while articulated streamlined trains and freight service at express speed are no longer news.

All of which comes to mind when thinking of the indispensable part the carriers have in the flow of the great currents of trade from one end of the country to the other, and then the possibility that looms of government ownership.

The government is not economical as a business enterprise. It cannot run the railroads except at excessive cost and if the service during the war is a criterion, we would, under government management, have poor service. The railroads are bearing extraordinary expenses in taxes both federal and local, in expenses created by laws that demand extra help and shorter hours, as well as from increased wage costs. In view of this greatly increased expense, they are entitled to ask for a reasonable revenue and it must be provided if we are to avoid receiverships and government ownership.

Cotton in Roads

Though cotton has been used as an aid or agent in road construction for upwards of fifteen years, it is only within the past year or so that it has attracted particular attention; and now its use is extended to 35 states for lining of ditches and use in highway and airport runway construction. This expanded use has been due to new legislation which permits expenditure by the Secretary of Agriculture for experimentation in new and improved uses for cotton.

As far as cotton in road construction is concerned, two methods have been employed. One, involving cotton mats for curing the concrete; and two, utilization of cotton fabric as a reinforcing agent in bituminous surfaced roads. In both cases, this cotton has been made available to state highway departments with the only provisos being their use in an approved manner and the recording of the performance for future evaluation.

So far three types of fabric have been used, varying in weight from 3.2 oz. to 5.3 oz. per square yard, and at a cost ranging from $168.96 to $295.68 per mile of road 18 ft. wide, figuring cotton at 8¢ per lb. and allowing no cost for manufacture of the fabric. To date, a total of 6,166,786 square yards have been supplied to states for reinforcing 578.23 miles, the largest user being Alabama with 1,260,094 sq. yds. and North Carolina a close second with 1,115,253 sq. yds.

It is estimated that by bulk purchase of cotton mats for curing concrete roads the cost may be reduced to as low as $5 each so that since these can be used as many as one hundred times, the cost would probably not exceed about 4¢ per cubic yard of concrete cured. The number of these mats that have been supplied to states totals 89,535, of which about 40% of the 25,400 for New York were only half the usual size of 22 ft. 6 in. long by 6 ft. 3 in. wide.

These mats as now employed serve several purposes. They can be used to prevent freezing of the ground prior to pouring the concrete, while the advantages from laying the mats directly on the fresh concrete are many. Due to their ability to retain moisture it has been found that usually one soaking per day is sufficient—an economical fact as regards labor and water particularly in an area where water costs are high. Results of experiments indicate that concrete cured by the use of these mats has a high compressive strength.

Cotton fabric as a reinforcement for bituminous surfaced roads frequently has been discussed in the MANUFACTURERS RECORD. The experiments thus far made are reported to be superior to bituminous surfaced roads without the reinforcement and that in at least one case where after nine years the road was re-opened, the cotton was found in an almost perfect state of preservation. Not only are these cotton roads an improvement in performance but they also offer a decided saving in maintenance costs.

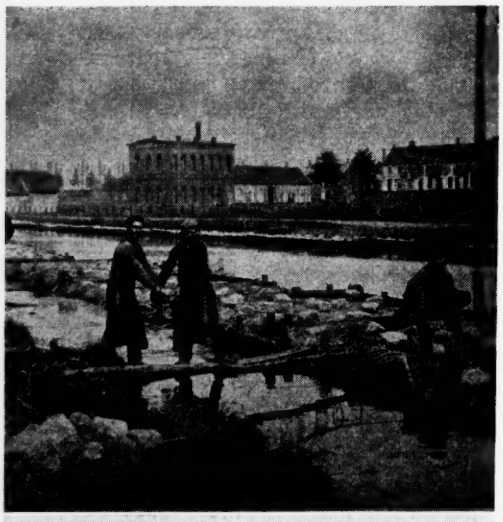
Mobile's Wealth

The Azalea Trail at Mobile, Ala., will be in bloom in March and April. It is the occasion of an annual festival. With most of the country winterbound, tourists from Northern states in increasing number each year are charmed at Mobile by the prodigal display of one of the most beautiful of flowers.

The French founders in 1711 planted azaleas in Mobile, and they have grown in some instances to trees 30 feet in height and 170 feet in circumference. Thousands of blossoms on a single plant leave not a leaf nor a branch visible through the density of its floral wealth. Colors vary from pure white to vivid crimson, pale orchid to deep purple, delicate pink to cerise.

Mobile's wealth of opportunity in industry, its development as one of our important ports, are well known, but in the mind of this scribe they take second place to Mobile's marvelous wealth of flowers and climate and sunny skies which contribute so largely to the real enjoyment of life.

Flax and Hemp as Possible Substitutes for Uneconomic Cotton Land



BY

George A. Lowry

THE rapid increase in cotton growing abroad under conditions and costs with which we can not compete and which will surely result in a rapid decline in our production makes it imperative that consideration be given to the finding of substitutes that we can grow to advantage and use in our present mill equipment.

We may hold our own for a time on our Sea Island and other long fibred cotton but for the greater part of our 26,000,000 spindles, the future looks discouraging.

The question of lower wages abroad is, of course, a serious one but not by any means the only one. In the countries with which we must compete, the growers are not dependent on the success of any one of their crops. They usually have a rotation of five crops, over which their yearly costs and labor are expended; so that the failure of any one crop is not so serious a matter as it is to our many one-crop farmers.

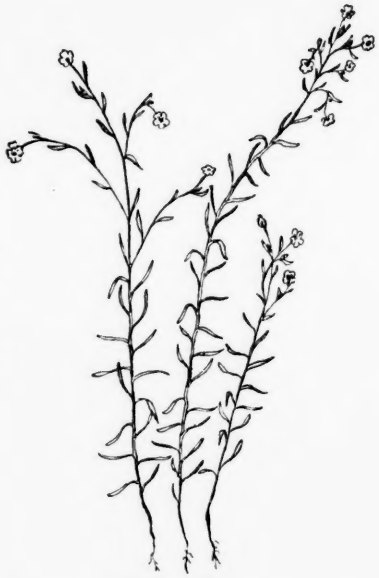
The Agricultural Department and State Agricultural Colleges are trying to get our planters to grow several crops to occupy more of their time and not throw the burden on any one crop; but nearly fifty per cent of them will not stay long enough on one location to give it a good trial, so that any relief from that source looks as if it would come slowly, if at all.

The oldest soils of the old world are the most productive, while our oldest soils have been improvidently used up.

Aside from the purely tropical, we have an infinite variety of soil and climate and can grow virtually anything the rest of the world produces; but in order to avoid failure we must understand what our competition is and not build too much on our mechanical ability to overcome their labor costs. For instance:

In Minnesota, Wisconsin and Dakota there were several million acres of marsh lands considered of little value and producing a wire grass suitable for matting. Machinery, nearly automatic, was developed to utilize this otherwise waste material and factories were producing fifteen million square yards per year; but the Japanese put their women and children to work in their own homes straightening rice straws; Tokio merchants supplied them with cotton warp and hand looms, then they came around and collected the matting, put braid on it and stamped patterns on it and shipped it in the empty tank steamers returning to the United States at prices much below the cost of wire grass rugs. In looking over the field for substitutes it is well to give attention to the foregoing possibility.

Top—Retting flax straw in Belgium. Center—Harvesting hemp by hand in Wisconsin. Lower—Cutting hemp by machinery in Wisconsin



Fibre Flax

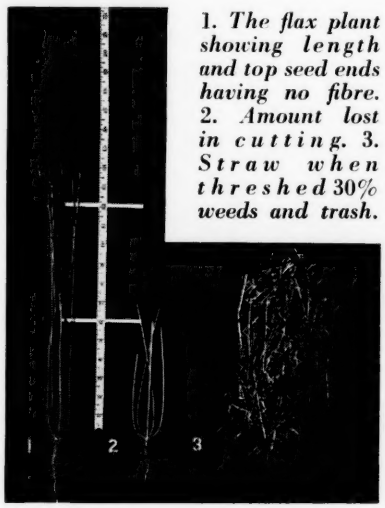
In considering Ramie (China grass) and Jute it must be born in mind that where they are now produced they are grown in garden patches, small enough so each family can take care of their own plantings. The women and children peel each stalk of the Ramie by hand, rub it on a board until they get the gum and bark off, then give it repeated washings and sun bleaching until it is marketable; then they tie it in bundles and sell it to the fibre collectors. There have been no wages to pay and no overhead. Jute comes from like sources but it has not so much

labor put into it. The natives ret it in a pond, get into the pond with it, strip it, wash it and dry it.

Ramie is a very beautiful fibre and would, when manufactured, compete with linen. It has great tensile strength but does not stand up under lateral friction. Because of the fact that it can be grown here and the stalks harvested from three to four times a year and for many years from the same planting, it has had a great fascination for those who can see only these engaging facts and not the reduction of it to fibre and the great waste in the hackling and spinning of it. Several mills have experimented with it at great expense but except for use as "gas mantles" it has not proved profitable in this country. Japan, however, is making very nice shirtings from it.

The foregoing may seem discouraging but it is merely to rid the decks of the impractical.

Recent progress in mechanics and chemistry have made it entirely practical and profitable to compete with the rest



1. The flax plant showing length and top seed ends having no fibre. 2. Amount lost in cutting. 3. Straw when threshed 30% weeds and trash.

of the world on the two great fibres—flax and hemp. Flax fibres are apparently about thirty inches long and hemp six to eight feet long but they are really made up of fibres about the same length and diameter of cotton and can be manufactured on cotton mill equipment. Hitherto the woody portion of the stalks which make up seventy to eighty per cent of the straw has been a complete waste, but this can now be made into wood flour and used in plastics at prices to more than cover the cost of producing the crop.

These straws as handled abroad would not do for plastics as they have been retted before decorticated and their valuable ingredients destroyed.

Mechanism has been devised to decorticate (clean) flax and hemp as it comes from the field and dry it without injury to either the fibre or the woody portion

Top—Harvesting flax at Savannah, Georgia. Center—Spreading flax for dew retting in Wisconsin. Lower—Taking retted flax from the pond in Ireland

of the stalk; and instead of the objectionable retting to get rid of the gums it is now done chemically in less hours than it takes weeks by present prevalent methods and with less severe chemicals than those hitherto used. This is done at only a fraction of present labor costs and with a resulting yield of over ninety per cent more spinnable fibre.

Flax, cotton and hemp fibre have the same amount of cellulose. The gums and waxes when recovered from flax have a higher melting point than beeswax. The chemical used in degumming flax is also recoverable. In fact there is a possibility that the by-products now being developed may reduce the cost of these most valuable fibres to less than half of what they can be produced for elsewhere.

Flax seed is now an important item of production in this country but we are still importing more than we grow.

Because, until recently, there has been no means of cleaning flax straw under sixteen inches the greater part of several million tons is now burned yearly to get rid of it.

As there has been no market for the straw it is allowed to become too ripe before harvesting and this does not make good fibre. Recent tests have shown that when flax is planted close together to avoid branching and when harvested at the right time, a very good fibre can be obtained without any damage to the seed.

In Europe they save both the seed and fibre from fibre flax and there is practically no distinction between the fibre flax seed and the seed flax seed except in the matter of a little more oil in the seed of the overripe straw.

To those interested in utilizing this most valuable of waste fibres (seed flax fibre), it might be done by buying the crop as it stands on the basis of its probable yield of seed (which is all the farmers now get from it), then harvesting it at the right time and saving both seed and fibre; much along the same lines as is now done with many fruit and vegetable crops.

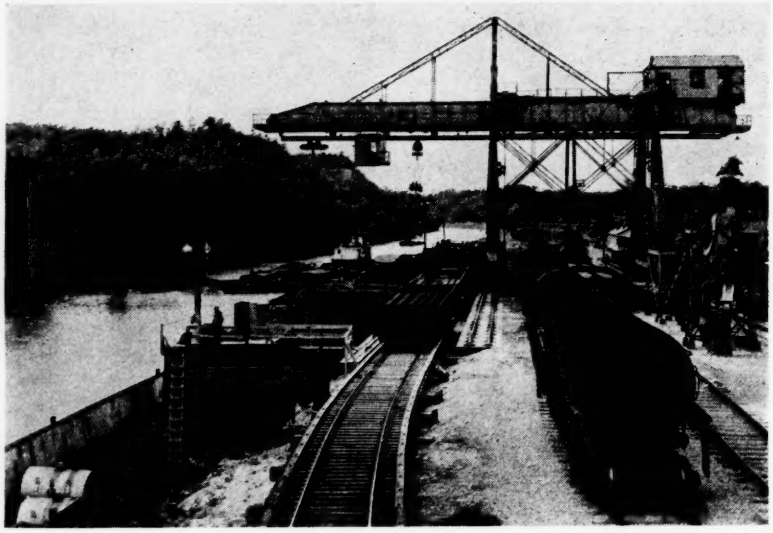
Farmers to whom this has been suggested have in each case liked the idea. Mechanism for threshing and decorticating the crops can be mounted on trucks and driven from the power of the trucks. Usually, though, the crop is grown in tracts large enough to make local plants advisable.

Most of the fibre flax is now grown in Oregon but it has been grown in every state of the union and with locations selected with the right soil and moisture, it can be a most profitable crop.

Hemp also is an easy crop to grow but has been limited in this country to the demand for the fibre for rope purposes. It produces about a thousand pounds of fibre per acre and this, when chemically degummed, makes very fine fabrics. It has plenty of absorption and it is stronger than cotton or flax.

Alabama Inland Waterway Handles Record Tonnage

Warrior-Tombigbee River System Plays Increasingly Important Part in the Industrial Life of the State



Tennessee Coal, Iron and Railroad Company Terminal facilities at Port of Birmingham on the Warrior River

BY

John M. Ward

Secretary, Alabama State Chamber of Commerce

A NUMBER of recent happenings have focused attention on the increasing importance of Alabama's inland waterways. The state ranks high in miles of navigable rivers having some 1488 miles within its boundaries. These rivers have always played an important part in the transportation life of the state even from the days of the early river steamboat. It is in recent years, however, that with the mining and industrial developments of the Birmingham district at one extremity and the Port of Mobile at the other, the Warrior-Tombigbee system, one of the country's major inland waterways, is an important factor in the industrial development taking place in Alabama.

The year 1937 witnessed the largest movement of tonnage in the history of the river. In 1937 $50,000,000 of new capital was invested in industry in Alabama. About 90% of this was in the Birmingham and Mobile districts and in other territory contiguous to this river system.

In January 1938 the largest tow in the history of navigation on the Warrior River moved downstream as eleven heavily laden barges bore 5,860 tons of freight to Mobile.

This cargo—the equivalent of several freight trains—came as a direct result of the new crest gate at Lock 17 which raises the level of Bankhead Lake to twelve feet.

Of the 5,860 tons in the cargo, 1,550 tons were of manufactured steel and iron from the plants in the Birmingham area. Three of the barges carried these goods, while the remaining eight barges were loaded with 4,310 tons of coal.

Mobile was the destination of the tow, but most of the steel and iron will probably be re-shipped to Texas and the Pacific Coast, as well as to foreign ports. The coal will be used for both export and bunker purposes.

In its original condition the Warrior River was navigable for only about five months each year to Tuscaloosa, which is at the southwestern edge of the Birmingham District, though considerable coal, timber, and other products were brought down from the upper river by rafts and flat boats during the early days.

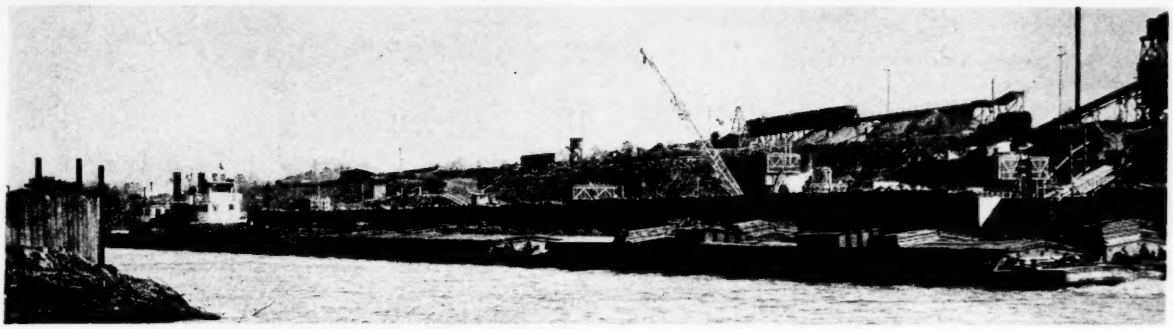
When Birmingham was founded in 1871, the development of the mineral resources of the state began almost immediately so that plans were begun to improve the Warrior River, and a six-foot project was proposed. Appropriations were very slow and uncertain in the early days, but work was eventually started on the first lock in 1888, and a system of 17 locks and dams was completed by 1915, giving a through channel, six feet deep, from Mobile to Birmingport.

Shipments of coal and other materials were started at once, but within a few years after it was demonstrated that a six foot channel was insufficient, the depth was increased to eight feet. This additional two feet was provided by dredging and the building of two-foot caps on existing dams.

Traffic gradually increased, reaching a maximum of about 1,900,000 tons in 1929, when in line with other business, it began to decline with the depression. However, the decline in river shipment was not as great as in most lines of business, and recovery was fairly rapid. While official details are not available, it is believed that about 2,000,000 tons were handled during 1937, and with the recent industrial developments now under construction in Mobile and in the Birmingham District, it is believed that the present year will show still further gains.

It has been demonstrated on this and other inland rivers that a nine foot channel is necessary for economical barge navigation. Such a program has been adopted for this river, and there is a probability that this will be brought to fruition within the next two years while a tentative plan has been adopted, and is now under way for the further improvement of this river system.

The crest gates recently completed on



Record tow passing between the cofferdams at the new Tuscaloosa lock: 11 *barges*, 5,820 *tons*

top of Dam. No. 17, as previously stated, raised the level of Lake Bankhead 12 feet, but in addition, this caused a back-up of the water in two of the tributaries adjacent to some of the highest grade coal lands in Alabama. As a consequence, shipment of this coal to Mobile has already commenced.

One of the most modern improvements thus far contemplated is the cut-off now being dredged at Sunflower Bend in south Alabama, which, when completed, will reduce the length of the river about ten miles and will relieve boats from navigating some of the worst bends on the river.

The original locks have proved to be too small and the new plan calls for fewer locks with higher lift dams and larger lock chambers. The new locks will accommodate a tow boat with a tow of 6,000 tons of freight at a single lockage, and the higher dams will give better channel conditions between locks. The first of these new locks is now being built at Tuscaloosa and will take the place of three of the old locks and dams.

Industrial Engineers, who have studied the question, believe that the present cost of transportation can be reduced at least one-third with the completion of the new project.

The future of industrial progress in Alabama is closely linked up with the continued development and use of this waterway. The Birmingham District is now producing coal, coke, iron, steel, cast iron pipe, cement, lime, textiles, rubber, paper, chemicals, stone, and slag, and needs a larger market for its products. By the use of this waterway it has already regained markets in Texas and on the Pacific Coast, which had been taken by German and Belgian imports. In addition to the products which move out of the Birmingham District, a number of southern products move up the river through the port of Mobile, such as phosphate from Florida, sulphur and oil from Texas and Louisiana, while imported foreign products such as manganese ore and potash also use this means of transportation.

Mobile has also felt the effect of waterway development and now has an excellent ship channel, 32 feet deep with adequate width, and a 35 foot depth of water over the outer bar. The state docks at Mobile, which were built at an original cost of about $10,000,000, have been added to from time to time, and now constitute one of the most modern and efficient ocean terminals of the world. Some of the facilities which have been added recently are a high density modern cotton compress, cold storage plant, bulk unloading plants, and a Free Trade Zone, the latter being the second of its kind to be established in the United States. The intracoastal canal, which connects Mobile on the east with Florida, and on the west with Mississippi, Louisiana, and Texas, has reached a stage of completion that is already beginning to show results.

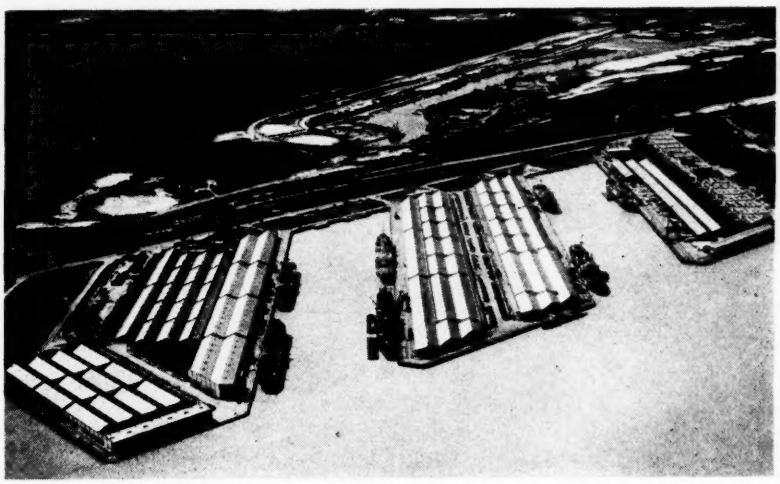
In addition to the oil refinery, paper mills, and shipyards, there are many small industries now operating in Mobile. There is an alumina reduction plant and a gypsum plant under construction, and a site has just been purchased for an additional large paper mill.

With its excellent railroads, highways, and waterways, Mobile offers unusual facilities for the assembly of raw material, the manufacture of finished products, and for their distribution to the world.

A study of this waterway will show many advantages offered for the location of industrial plants. Some of these are: Raw materials either here or available by cheap water transportation; cheap and abundant fuel supply; both steam and hydro-electric power at reasonable rates; both natural and artificial gas at several points; adequate rail and highway transportation in addition to the waterways, which are "ice free" all the year; an abundant supply of both white and colored labor; climatic conditions which allow outdoor labor all the year, and which make living conditions both cheap and pleasant; available sites with reasonable land values; reasonable taxes and a population that welcomes the right kind of new industry.

Alabama has other important rivers, among them being the great Tennessee River in the northern part of the state which is expected to become navigable in the near future. A detailed survey has been going on for two years by the U. S. Army engineers to determine the feasibility of connecting the Tennessee River with the Warrior-Tombigbee system, thus giving the Tennessee Valley a direct route to the Gulf and the Birmingham district a water route into markets to the north of it.

Interest is again being manifest in the Coosa-Alabama River system and efforts are being made at present to have a new survey made of this proposed development.



Aerial view showing Piers A, B, and C at Alabama State Docks, Mobile

Facts Needed About Prices

On February 14, Senator Bailey, introduced a resolution for an investigation of the country's price and profit structure. When the resolution was reported back with the unanimous approval of the Senate Commerce Committee on February 23, Senator Bailey said "If this resolution is approved, I would expect a sub-committee to proceed to investigate the entire field of price, with a view to ascertaining whether there is a disparity between prices for raw materials, prices for labor, and prices charged the consumer."

The purpose of this inquiry and what it will accomplish are here explained by the Senator.

BY

Josiah W. Bailey

U. S. Senator from North Carolina

Josiah W. Bailey

FOR many years, I have heard complaints about prices. In the last six months these complaints have become quite emphatic and widespread.

The complaints have been of the following general tenor:

1. That the farmers or raw material producers were not receiving for their products prices fairly comparable to the prices paid for the finished products by the consumer.

2. That the manufacturers were demanding more of consumers than was just.

3. That there is a disparity as between the prices paid to the farmers and the prices which farmers are required to pay.

4. That there are great combinations in America which have the power to fix prices when buying and when selling.

5. A more recent complaint has been that business has fallen into a recession because it is charging more than the consumers can pay and ought to reduce its prices in order to obtain volume.

I have not been able to get the facts and I believe the time has come when the Congress and the American people ought to have the facts as they are for whatever they may be worth.

If the Resolution I introduced should pass and I should have any hand in the inquiry, I would undertake first of all to bring about a thoroughly just investigation. I would not wish to prove anything and I would not wish to persecute anybody. I would seek to get the facts just as they may be.

Some complaint has been made that the inquiry would be too vast to be practical. I think we can have a rather simple inquiry.

1. Find the price of standard raw material commodities, wheat, cotton and other similar products in common use.

2. Seek to find the cost of producing wheat and cotton—the farmer's cost.

3. Undertake to ascertain the farmer's profit and what is a fair profit for him.

4. Find the cost to the consumer of the finished goods in common use—bread, dress goods and ordinary clothing.

5. Find how much of the dollar paid by the consumer goes to the farmer, how much goes to labor, how much goes to taxes, how much to freight, and how much goes to profit or dividend.

The foregoing outline must be considered as an effort to simplify the price question. If we should go into a very wide range and should try to take in the 784 commodities put down in the Government Index we might fill many volumes, which no one would read. On the other hand, if we will take a few simple articles and find the facts concerning them, I believe we would be much more prepared than we now are to discuss the matter of prices.

I would like to find out just what is in the way of the necessary progress in the construction of dwellings. One man states that the labor cost is too high. Another says the local taxes are too high. Another that the cost of lumber is too high and again that the cost of freight is too high. I would like to go into the whole matter and find out just what the cost is in each phase of the construction.

I wish to get rid of generalizations and indefinite attacks. Our American disposition to find a goat is a very bad thing. When things go wrong, we jump on somebody just like a little child will do and we have a great disposition to blame everyone except ourselves. One may blame the Government, another may blame taxes, and another may blame labor and some may even blame the farmer. Why not go into the matter and find the simple facts about the simple commodities of current use? If the corporations in America are making too much profit, let us have the data to show it. If they are not making enough profit, let us have the data to show it.

We have greatly increased taxes in this country and we have had some considerable increases in wages. We are now met with a public demand to reduce prices. Is it possible to increase taxes and increase wages and at the same time reduce prices to the consumer? If it is not possible, we ought to be able to show the consumer wherein it is not possible. If the burden of taxes in America has brought about a necessary increase in prices, the sooner we inform the consumers of this fact, the better. On the other hand, if, notwithstanding the increase in wages and the increase in taxes, there are those who are oppressing the people with exorbitant profits, we ought to know that also.

But the main thing is to know and not to speculate. We must know the truth.

I have no theory to prove and I would not exploit any human being or activity for political purposes.

This morning I received a letter from a business man rebuking me for introducing the Resolution. I quote his words:

"For the love of Mike, why can't you fellows down there leave business alone and tend to your own business—that of runing the government—and see if you can't save some of the enormous expenditures of the government. You would be doing the country a real benefit, instead of this constant harassing of business and letting the government organizations run wild."

I can understand the attitude of this business man. There has been such an attack upon business that he is over-sensitive, but it should be said to him that no

(*Continued on page* 62)

Selection of Pulverized Coal Equipment

Essential Information for the Building, Expansion, or Improvement of Power Plants*

BY

Ollison Craig

THE term "Pulverized Coal Equipment" primarily includes pulverizers, burners and furnaces. There are a number of factors to consider in selection of such equipment. These factors include—

Size or capacity of steam generating equipment.
Character of plant, that is, industrial or utility.
Kind of industry if the plant is industrial.
Geographic location.
Location with respect to surrounding area.
Problem of fly ash emission from stack.
Type of steam generating equipment.
Type of heat recovery equipment, if any.
Coal to be burned.

And there may be other special considerations in specific cases.

It is generally proper to design a new boiler installation and to select equipment with the expectation of making use of coals available to the locality or coals which might reasonably be expected to become economically available at some future time. The principal characteristics of coals which affect operation of pulverized coal equipment are—

Heat value
Grindability
Volatile content
Moisture content
Abrasiveness
Ash content

Heat Content

It is rarely that any other coals are used for pulverized coal firing than bituminous coal. The heat value of bituminous coal varies widely as between different classes of coals and different localities. The heat value of certain Illinois and Iowa coals may be as low as 9,000 Btu. per pound. Certain Eastern coals may run as high as 15,000 Btu. per pound in this respect. For a given amount of steam to be produced by a boiler almost twice as much of the low heat value coal will need to be pulverized and burned as would be required with the higher heat value coal. Such being the case approximately twice as much capacity of pulverizing equipment would be needed with one coal as with the other.

Grindability

Certain coals are easier to grind than others. This characteristic is expressed by the term "grindability." A coal which is easy to grind is considered to have a high grindability and the coal which is hard to grind is considered to have a low grindability. A given pulverizer has greater capacity for grinding high grindability coal than it has for grinding low grindability coal. One machine may have ability to pulverize 50% more coal having a grindability index of 100, than it would have in the case of coal having a grindability index of 50, other conditions remaining the same.

If a plant is so located that the available supply has a grindability of 100, a certain amount of this is required to make a given amount of steam. Then a certain size pulverizer must be selected to pulverize this amount of coal. If, however, a plant is so located that the available coals have a grindability of 50, and if the same amount of coal is required to generate the same amount of steam, a larger size of pulverizer must be selected to pulverize this same amount of coal. The increased size of pulverizer in the second case, expressed in some selected scale of capacity, may be as much as 50%.

Since the capacity to pulverize is a function of grindability, it is desirable to have some definition of capacity. It has become more or less accepted practice to rate the capacity of pulverizers on the basis of number of pounds of coal per hour that can be pulverized, the coal being similar to Pittsburgh No. 8 having a grindability of approximately 55, a moisture content of 5%, and being pulverized so that 65% of the product will pass a 200 mesh screen.

It will be seen from this definition that capacity is also a function of moisture in coal and fineness to which coal is pulverized.

Assume two plants, one using coal having a grindability of 50 and requiring to pulverize 10,000 lbs. of this coal per hour to generate a desired amount of steam, and a second using coal having a grindability of 100 and also requiring 10,000 lbs. to produce the same amount of steam. If, in the first case, a pulverizer is selected having a capacity of 10,000 lbs. per hour, then in the second case a pulverizer would be selected having a capacity of 6500 to 7000 lbs. per hour, on the basis of rating as defined above.

It is a fairly simple problem to select the proper size of pulverizer for plants which have available at all times coals of approximately the same grindability. The problem becomes more complex in the cases of those plants which have coals available, or which are so situated that coals may become available, having a wide range of grindability. In such cases it is good judgment to select equipment having capacity to meet the maximum demands when grinding coals having the lowest grindability index. The tendency, unfortunately, is to select smaller equipment of lesser capacity with the expectation of pulverizing coal of higher grindability. In such cases the plant is then definitely limited to the use of one type of coal. Should the fuel market change so that the low grindability coal becomes the most economical to use, advantage cannot be taken of the situation and the plant may be faced with the necessity of operating for long periods of time at higher fuel cost than necessary. Other factors could also make it desirable to use higher grindability coals at certain times, such as deliveries, strikes and availability of so-called "distress" coal.

Volatile Content

Bituminous coals range in volatile content from a low of about 16%, to a maximum of about 40%. There is a rough relation between volatile content and grindability. Usually high volatile coals, say in the range of 30% or more, have a low grindability index, that is, they are relatively hard to grind. The grindability may be from 40 to 65. Usually coals having low volatile content, say from 16% to 25% have a high grindability index. This may be from 85 to 100. Medium volatile coals, say from 23 to 32%, will have a medium grindability index, possibly within the range of 65 to 90. The relations as given here between volatile content and grindability are very approximate and they apply only to bituminous coals. There are many exceptions to these relations. However, it is rare that a coal having over 35% volatile content will have a grindability higher than 65, and it is also rare for a coal having a volatile content of less than 20% to have a grindability index of less than 85. In general, then, it can be expected that with high volatile coals, pulverizers must be selected having greater rated capacity to produce the same amount of steam than would be required with low volatile coals.

Moisture Content

The amount of moisture in coals affects the grinding capacity of pulverizers. It is not, however, the total moisture content that has this effect. A portion of the moisture in coal is sometimes referred to as "inherent" moisture and another portion referred to as "free" moisture, the sum of these two constituting the total moisture. It is usually assumed that it is only the free moisture that affects pulverizer capacity. However, this is a subject which has not been thoroughly explored. It is the writer's feeling that of the total moisture contained in a given coal at a given time, a certain portion may be considered as hygroscopic moisture. It is also the writer's feeling that it is that portion of the total moisture over and above this hygroscopic moisture, which affects pulverizer capacity.

Free moisture apparently causes coal particles to adhere, prevents fresh surfaces from being brought into contact with grinding surfaces of the pulverizer and thereby reduces the amount of coal that can be pulverized with a given pulverizer in a given time.

Usually less consideration is given to possible moisture factor than to any other factor affecting the capacity of pulverizer selected for a given installation. This may come about thru uncertainty as to just what allowance should be made for moisture in determining capacity require-

(Continued on page 44)

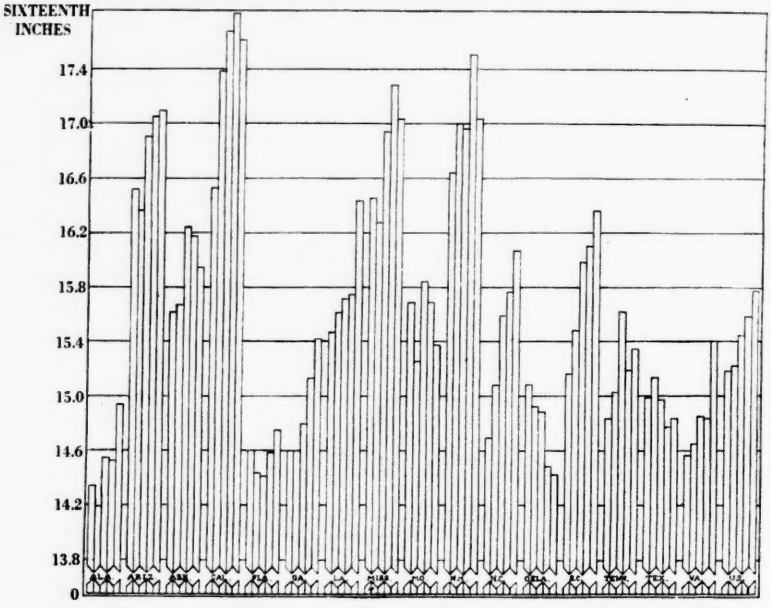
*A paper read before the 22nd Fall Engineering Conference, Atlanta, Ga., Feb. 8, 1938 and sponsored by Appalachian Coals, Inc.

Suggestions for the Future of the Cotton Industry

BY

Will Witmor*

AFTER years of experimentation on the part of government to raise the price of cotton, the situation remains as far from being solved as ever it was. In seeking the cause of this failure, one does not have to look very far. The surprising thing is that after Japan's failure to control silk; England's failure to control rubber; Cuba's failure to control sugar; and latterly, after many years, Brazil's failure to control coffee—our own government should persist in a proven fallacy. The latest theory, incorporated in the crop control bill which may possibly be declared unconstitutional even if the present move for repeal be defeated, is foredoomed to failure like its predecessors. Why? One can only assume that government rocognition of the fundamental cause would deprive the politicians of their hand-out of the taxpayers' money which in the past four years has amounted to the enormous sum of almost $540,000,000. Naturally, as long as money is to be given away for nothing, there will be plenty of indigent cotton growers who are willing for their neighbors to foot the bill. Arguments to the effect that cotton benefits will help to raise the standard of the "under-privileged third" are dispelled by the fact that it was the landlords who benefiitted most and not the share-cropers and share-tenants, from the subsidization programs of 1933 and 1934.



Average Staple Length of American Upland Cotton Shown in Five Divisions for Each Cotton Growing State for the Years 1928, 1930, 1932, 1934 *and* 1936 *Crops*

The truth is that we are not producing too much cotton, but at too high a cost. We persist in adopting a defeatist attitude and regard our cotton dilemma as a domestic affair, totally ignoring the important position in point of quantity and quality of American cotton in the world cotton trade.

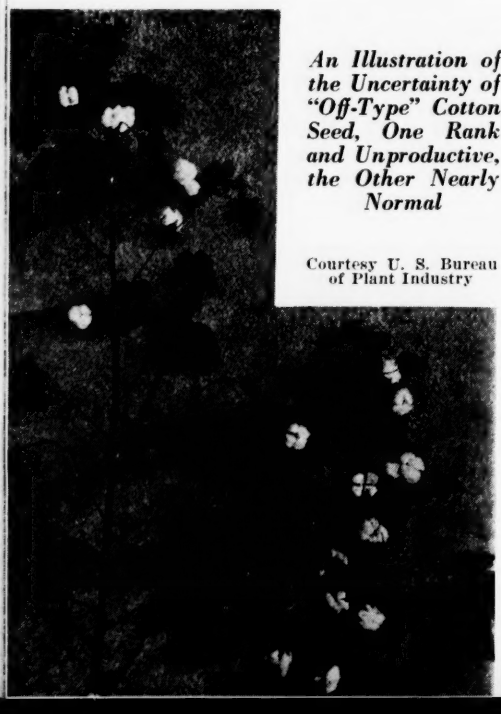
Never in the history of recorded statistics has the world's consumption of cotton been as great as it was last year. This in spite of the declining price of competitive materials. In other words, consumption of cotton has not declined, but as a commodity its marketability has undergone a transformation.

As long as cotton textiles occupied a position of virtual monopoly in the realm of textiles and the bulk of quantity and quality cotton was produced in America, American cotton producers could count upon sustained demand. But with the steadily mounting production of cotton in foreign countries coupled with lower labor costs, it was a foregone conclusion that America would eventually be faced with competitive production; and the sooner we realize that cotton is no longer a *necessity*, the sooner shall we embark upon a constructive future.

Nevertheless, for upwards of forty years, foreign production has increased at a greater rate than has American cotton, and there can be little or no doubt that the increase will be enlarged under intensive methods and materials of production; seed in some instances being supplied free of charge together with growing instructions by respective governments. Ironical though it is, the present policy of price pegging by the American government has been and will be a tremendous incentive further to increase production in foreign countries.

Whether one agrees or not with the theory of subsidization in some one of its many forms is not of immediate concern, particularly since it is now an universally acknowledged expedient. That being so and assuming the legitimacy of a cotton subsidy, it is a matter of vital concern that the terms under which the subsidy is granted shall be of a constructive nature with a reasonable assurance of the industry returning to at least a semblance of economic stability. The question remains as to how this can be

*The author wishes to acknowledge his indebtedness to the U. S. Dept. of Agriculture for much of the statistical matter contained herein.



An Illustration of the Uncertainty of "Off-Type" Cotton Seed, One Rank and Unproductive, the Other Nearly Normal

Courtesy U. S. Bureau of Plant Industry

done. The contention of the author is that this can only be accomplished by reducing production costs, a statement which involves an exceedingly large number of factors—physical, biological, mechanical, economic and human. All of which will vary under different circumstances and in different localities.

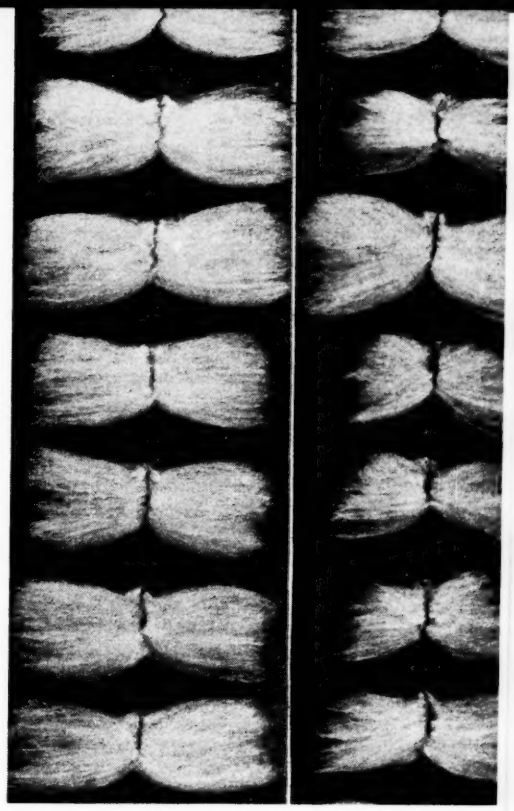
The reduction of production costs, however, is a relative procedure that can be brought about by one or more of several methods: (1) improve the quality; (2) increase the total percentage of the longer staples; (3) produce a heavier yield; and (4) reduce the actual costs of production.

The South has been accused of being a one-crop land, the veracity of which is attested by its approximate annual average of 38 percent of the total farm land in the principal cotton growing states being given over to cotton. Such a high percentage inevitably results in the depletion of soil value so that commercial fertiliser is necessary in large quantities. In fact, the South leads in fertiliser consumption, five states alone consuming more than 50 percent of the country's total tonnage, the cost of which represents more than $5.00 per acre average. Such heavy fertilisation it is believed, would be unnecessary with a greater proportion of diversified crops. Because cotton is admittedly the largest per acre income producing crop indigenous to the South, little or no attention has been paid to other possibilities until the past year or so when sufficient diversification was practised to prove its economic practicability. Heretofore, it has been contended that the gross value per acre of livestock and dairy products ranged from $4.30 to only $26.30 as compared with $36.25 for cotton (based on a ten year average), but it was overlooked that the man hours required had a comparable range from 13 hours to 40 hours as compared to cotton's 112 hours. Again, on a farm of 70 acres planted principally to cotton, the net farm income has been estimated at $272.00; whereas if the acreage were increased to 100 and the extra 30 acres devoted to pasture, and cotton was planted proportionate to the extent of dairying thus possible, the net farm income would be more than doubled, $565.00. From the foregoing it is apparent that diversification would (a) increase the farm income, (b) improve soil value through the application of farm humus and alternation of crops, and (c) reduce production costs in general and of cotton in particular.

The question of confining cotton production to those lands having the highest per acre yield in comparison with low per acre cost is one that may become of pressing necessity and automatically involves the question as to what shall be done with the retired land and displaced labor. Also, it is dependent upon the ability to reduce individual production costs. Recent years have witnessed a marked tendency of a shift to the west in cotton growing. This has brought growing into the area of irrigation, where for some time the quality was such that its demand was considerably less than the cotton produced elsewhere. This difficulty has now been solved so that the per acre yield, as seen from the accompanying table, is more than 100 pounds greater than the next largest yielding area. On the other hand, per acre production costs are the highest, the variation to the next highest being only slightly less than the total costs of the area having the lowest per acre yield. The quality and staple length of cotton grown in the irrigated area is a pertinent factor in the present consideration, but will be referred to later.

However, should it become possible to reduce individual production costs, there can be no sidestepping the issue of re-

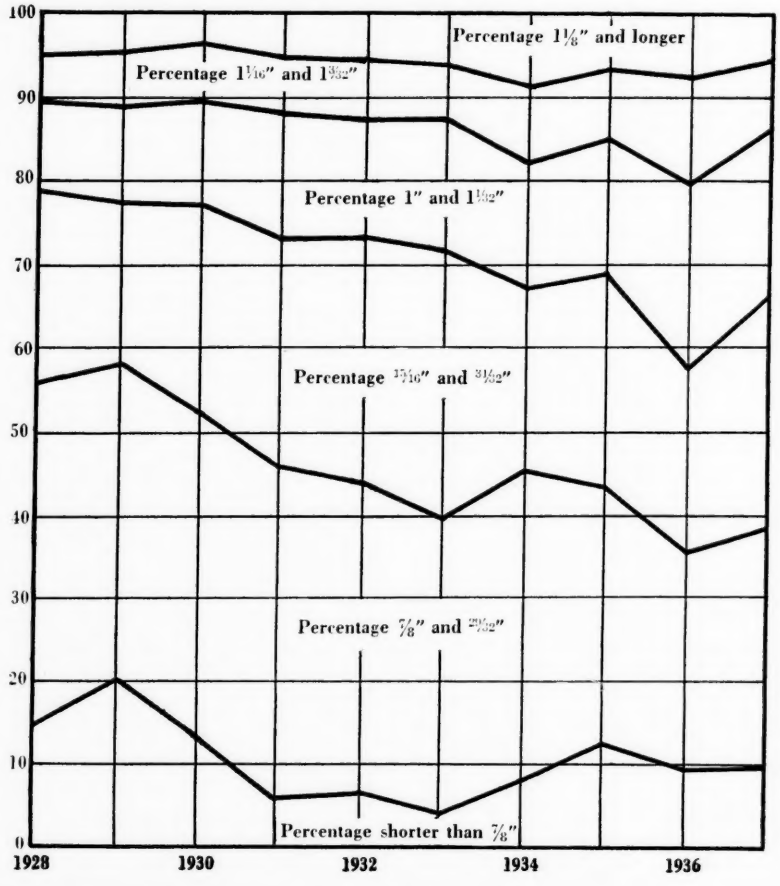
(*Continued on page 54*)



Courtesy U. S. Bureau of Plant Industry

Combed seeds from a normal Acala variety and right—from a rogue progeny

Percentage distribution by staple length of American cotton for the annual crops 1928 to 1937



Steel Corporation Enters Home Building Field

The United States Steel Corporation made a definite move into the steel home field when last month it cooperated with the Farm Security Administration in completing an experimental group of steel farm buildings at Greenbelt, the new Maryland town developed by the Resettlement Administration near the Nation's capital.

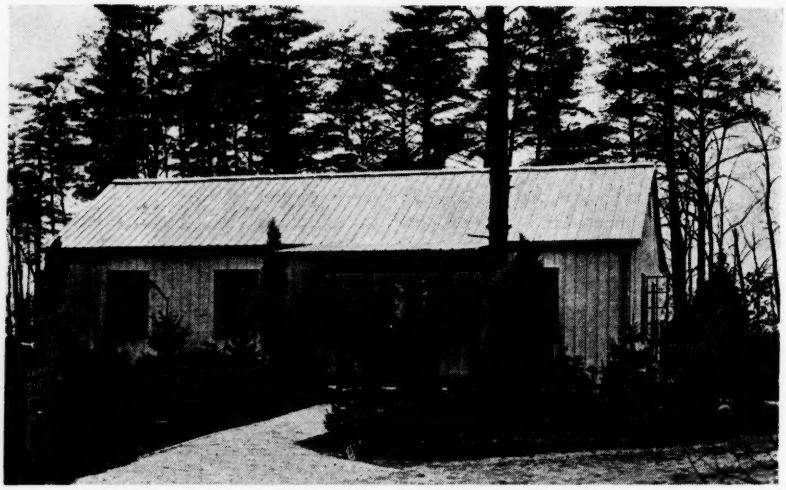
Less pretentious than the more expensive structure now occupied or nearing finish in the Greenbelt community proper several miles away, the buildings were the subject of many interesting discussions carried on by a hundred or more persons assembled during an inspection tour headed by Robert L. Gregg, president of the Tennessee Coal, Iron and Railroad Co., U. S. Steel's southern subsidiary which made the steel, and Capt. R. B. Lord, chief of the F. S. A. construction division.

The group of buildings is made up of a five-room house, a two-cow, two-horse barn and wagon shed with 12-ton hay loft above and a 500-bushel corn crib below, a 50-bird poultry house, a smoke house or wood shed and a sentry-box type out-house. All of the exterior construction is carried out in a standard 4-foot panel of V-crimped siding assembled and tackwelded to steel channel studs and cross-members at the factory. Wood is used in such parts of the chicken house as the perches and in the feed trough of the barn.

Some of the interior of the house is also finished in wood, with Celotex panels used for insulating the outside walls and in the partitions between the kitchen, living room and three bedrooms. These partitions are attached to steel studs similar to those in the exterior walls.

Wood floors are laid on wood joists supported by steel channels. Beaded sheet steel forms the ceiling, which is insulated with rock wool. Both interior and exterior doors—there are two of the latter—are wood, the material also used in the interior frames. The eight windows are equipped with a steel casement sash, an integral part of the standard steel panel unit.

Steel barn and wagon shed



Experimental Steel House built by Tennessee Coal, Iron and Railroad Co., and erected at Greenbelt, Md.

It is proposed later to replace the wood floor with a steel deck covered with composition. The 13 tons of steel now required for the five buildings will be materially reduced by substitution of a lighter type roof design for the trusses now employed and by use of a lighter gauge of galvanized copper steel siding.

Ground size of the house is 20 by 40 feet. The length can be increased by removal of the end walls and installation of additional panels. Total cost of the present arrangement is $1,250. Approximately $200 of this is estimated as the labor cost for both steel erection and the wood work.

The barn is 20 by 32 feet. Materials used in its erection cost $550, with the estimate of the labor cost placed at $130, making a total outlay for this unit of $680. Cost of the poultry house is $124, or $110 for materials and $14 for labor. The unit is 12 feet square. The smoke house, or wood shed is 8 by 12 feet. Cost of its erection is $12, with the remainder of the $110 total apportioned for materials.

The foundation of the dwelling is a series of hot rolled steel channel sections with plates welded to the lower ends for footings. The upper ends are bolted to the wall panels through slots for height adjustment. This type of foundation, engineers of the T. C. I. pointed out, is optional, as any conventional type, including wood piling might be used.

Plainness of appearance is compensated for by substantiality. The combination of steel siding and channels with simplicity of design and comparative ease of erection is hoped by the Farm Security Administration officials and T. C. I. executives and engineers to be a forward step toward development of adequate but low cost dwellings and farm buildings for the tenant farmer. It is estimated that 250 man-hours of labor are sufficient to erect the entire group or ten men working less than nine days. This includes carpentry work and painting.

The heating unit for the residence is an all-steel fireplace for burning wood as fuel. It is located in the partition between the living room and the kitchen and has registers both near the floors and the ceilings of the two rooms. Any suitable type of heating plant may be used. For the lowest cost houses some form of heating stove is recommended.

Designs for the buildings were developed under direction of the head of the F. S. A. division by his assistant J. B. Gibson, Albert Dunlap, and Ray Crow, engineer at Birmingham for the Tennessee Coal, Iron and Railroad Co. Actual fabrication of the panels was done at the Decatur, Ala., plant of the Decatur Iron and Steel Co. under supervision of Henry R. Davis, its president.

February Contracts Total $48,254,000 in South

FEBRUARY contracts for the sixteen states of the South, as compiled from the daily reports of Construction, were valued at $48,254,000. Compared with January, this figure is an eighteen per cent decline. Compared with February of last year, it represents a decrease of about eleven per cent.

The current February total is the lowest for any month since May of 1936. Private building awards, however, are stronger than they have been in five months. They are twenty per cent ahead of January of this year and almost thirty-eight per cent above the total value of contracts awarded during February of 1937.

Drops in three classifications figured in the lower contract totals. Road, street and bridge construction was forty-seven per cent below the amount undertaken in January. The decline in highway work from February of last year was a little over five per cent. Public building work declined twenty-five per cent from the January awards, but was seventy per cent above February of 1937.

The other contributing factor in the decline was the lower figure for engineering and industrial work. Heavy construction, such as drainage, flood control and dam construction, did much to bolster the figure and bring it to $11,336,000. Industrial construction ebbed to $4,783,000 for a variety of small enterprises.

Private building advanced over both the preceding month and February of last year and totaled $15,692,000. All types of work, except churches and dwellings, showed substantial gains over January. The largest in percentage was association and fraternal work, which was over eight hundred per cent ahead of January's $45,000.

Store contracts during February made the largest increase in dollar value. The rise above January was $1,776,000, or over seventy per cent. The forty-eight per cent increase of hotel and apartment work, which altogether totaled $4,942,000, ranked next. Bank and office contracts were fifteen per cent above such work awarded in January. Church and residential construction were fifteen and twelve per cent, respectively, behind January's figures.

The list of store projects included the $500,000 department store of Burdines, Inc., at Miami, Fla.; the $450,000 F. W. Woolworth project at Charlotte, N. C.; Montgomery Ward's $300,000 project at Houston, Tex., and another at Rome, Ga., to cost $125,000; the $100,000 modernization program for Rice's Fashion Corner, at Norfolk, Va.; a $175,000 store at Montgomery, Ala., for the Legrand-Stakely Estate, and W. T. Grant's $75,000 betterments at Birmingham, Ala.

Apartments and hotels mentioned in the news last month included the $1,000,000 apartment house development at Baltimore for the Roland Park Co.: the $850,000 Gilmour Court project at Richmond, Va.; a $750,000 program for the River Oaks Corp., at Houston, Tex.; a $250,000 Webster apartment job at Washington, D. C.; and a $100,000 building at Virginia Beach, Va., for Gay Manor Hotel Corp.

Dwelling contracts for February totaled $4,510,000. Among these were the $360,000 award made by George G. Ridgely for 56 dwellings at Annapolis, Md.; a $150,000 dwelling development at Norfolk, Va., for Gatling Construction Co.; the $40,000 model homes project at Greenville, S. C., for Caine Realty and Mortgage Co.; eight dwellings to cost from $4,000 to $5,000 each at Memphis, Tenn., for Ben P. Dlugach, and the plan of Tropical Builders, Inc., to erect 200 dwellings altogether to cost $1,000,000 at Coral Gables, Fla.

Although February's industrial and engineering contracts dropped, proposed work totaling $51,635,000 in value, of which seventy-four per cent was represented by industrial work, included a $500,000 building program for Fleischer Studios, Inc., which is to move its motion picture plant to Miami, Fla.; the $250,000 dimension lumber and saw mill enterprise at Elkins, W. Va., for the Kenwood Corp.; and a $500,000 natural gasoline plant in Wichita County, Texas, for Sunray Oil and Phillips Petroleum companies.

Six Southern affiliates of the Commonwealth & Southern Corp. will spend $15,457,219 this year for fixed capital additions. Most of the amount will go for electrical improvements, including $8,193,796 for distribution facilities, $4,349,083 for transmission lines, $1,693,006 for fuel plant improvements and $39,232 for hydro plant work. The 1938 program of the Southwestern Gas & Electric Co., of Shreveport, La., will total approximately $2,900,000. This includes a 50-per cent increase in capacity of the Arsenal Hill generating station by installation of a 15,000 kilowatt turbo-generator.

Preliminary plans are now being prepared for the $1,000,000 Armour packing plant at Houston, Tex. The $1,000,000

Southern Construction Activity

	February		February		First Two Months
	Contracts Awarded 1938	Contracts Awarded 1937	Contracts to be Awarded 1938	Contracts to be Awarded 1937	1938 Contracts Awarded
GENERAL BUILDING					
Apartments and Hotels	$4,942,000	$2,397,000	$1,678,000	$3,735,000	$8,149,000
Association and Fraternal	410,000	60,000	430,000	152,000	455,000
Bank and Office	1,152,000	601,000	924,000	595,000	2,150,000
Churches	378,000	232,000	1,915,000	877,000	826,000
Dwellings	4,519,000	4,511,000	10,005,000	4,805,000	9,710,000
Stores	4,291,000	3,500,000	4,715,000	3,865,000	6,806,000
	$15,692,000	$11,301,000	$19,667,000	$14,029,000	$28,096,000
PUBLIC BUILDING					
City, County, Government and State	$6,637,000	$2,957,000	$12,798,000	$18,488,000	$14,316,000
Schools	4,696,000	3,672,000	10,214,000	7,878,000	12,015,000
	$11,333,000	$6,629,000	$23,012,000	$26,366,000	$26,331,000
ROADS, STREETS and BRIDGES	$9,893,000	$10,576,000	$54,044,000	$25,747,000	$26,713,000
INDUSTRIAL and ENGINEERING					
Drainage	$4,314,000	$1,238,000	$4,760,000	$1,587,000	$6,010,000
Filling Stations and Garages	550,000	490,000	475,000	490,000	956,000
Industrial Plants	4,783,000	26,917,000	38,454,000	43,089,000	13,987,000
Sewers, Waterworks	1,689,000	1,839,000	7,946,000	4,486,000	5,514,000
	$11,336,000	$30,484,000	$51,635,000	$49,652,000	$26,467,000
Total	$48,254,000	$58,990,000	$148,358,000	$115,794,000	$107,607,000

Coca Cola plant proposed for Dallas, Tex., is also in the plan stage. Marquette Cement Manufacturing Co. is carrying forward a program for improving all operations prior to the grinding process at its Cape Girardeau, Mo., plant. Koppers Coal Co. is opening a new mine near Oceana, W. Va. The Mammoth Producing & Refining Co. was reported to be planning a $250,000 oil refinery at Corpus Christi, Tex.

The City of Natchez, Miss., will issue $300,000 bonds to erect a building to house a $2,000,000 tire manufacturing plant, for which Sears Roebuck & Co. has already placed equipment orders. National Container Corp., at Jacksonville, Fla., plans starting construction on its $1,000,000 box factory as soon as the $3,500,000 pulp and paper project is completed. Swift & Co. plans a $400,000 cottonseed and soybean oil mill at Blytheville, Ark. Adolphus Rice Milling Co., Inc., acquired a Houston, Tex., site for a $100,000 mill. A program of improvements at the Ashland, Ky., plant of the American Rolling Mill Co., is costing $175,000.

Federal engineers were active in receiving bids and letting contracts for work along both the Atlantic and Gulf coasts and on the inland waters. A $2,699,000 bid was submitted for constructing Dam No. 24 on the Mississippi River at Clarksville, Mo., ninety-five miles above St. Louis. Channel improvements included those in the Sabine Neches waterway, at Beaumont, Tex.; in the intracoastal waterway at Miami, Fla.; in Homochitto River, Mississippi; and at Indian River inlet, Maryland.

Bids were opened for the Possum Kingdom dam, at Tex., by the Lower Colorado River Authority. The Finance Board of Greenwood County, S. C., set the date for receiving proposals to construct the $1,000,000 Buzzards Roost hydro-electric project. The City of High Point, N. C., proceeded with foundation explorations for a $5,300,000 municipal hydro-electric plant. Memphis, Tenn., let additional contracts for its $6,872,000 municipal distribution system. Reports indicated that the $37,500,000 Santee-Cooper project in South Carolina would begin in the fall.

Representative Projects in South Last Month

Contracts Awarded

Ala., Montgomery—LeGrand and Stakely Estate Store; Bear Lumber Co., Contr.	$175,000
Ark., Berryville—Carroll Electric Cooperative Corp. Rural electric system; A. A. Electric Co., Cicero, Ill., Contr.	138,000
D. C., Washington—Constructing Quartermaster Heating plant; (Bolling Field); Norair Engineering Corp., Contr.	108,000
D. C., Washington—Department of the Interior Building; (St. Elizabeth's Hospital); John McShain, Baltimore (low bidder)	293,000
Florida—Gulf County Commissioners Complete canal; Hill Dredging Corp., Ventnor, N. J., Contr.	145,000
Florida—U. S. Engineer Dredging (Intracoastal Canal); Arundel Corp., Baltimore, Md., Contr.	148,000
Fla., Bay Pines—Veterans Administration Hospital; Edward S. Moore & Son, St. Petersburg, Contr.	416,000
Fla., Pensacola—Standard Oil Co. Oil terminals; Noonan Construction Co., Contr.	175,000
Ga., Albany—City and Dougherty County Boards of Education High School; A. C. Knight, Contr.	109,000
La., Alexandria—State Hospital Board Hospital building; Caldwell Bros. & Hart; Contr.	443,000
La., Lake Charles—City Sewage treatment plant; Pittman Brothers Construction Co., New Orleans, Contr.	179,000
La., New Orleans—Canal Bank Building Air Conditioning; Carrier Corporation, Syracuse, N. Y., Contr.	280,000
La., New Orleans—U. S. Engineer Office Earth excavation; Dameron & Kenyon, Port Allen, Contr.	238,000
Md., Annapolis—George G. Ridgely Dwellings; Newbold Construction Co., Bethesda, Contr.	360,000
Md., Baltimore—Property Sales Co. Dwellings;	176,000
Md., Glenburnie—Maryland Training School for Colored Girls Administration building; Morrison Brothers, Bethesda, (low bidder)	124,000
Md., Hyattsville—Prince George's County Board of Education High school addition; T. Calvin Owens, Bethesda, Contr.	109,000
Md., Salisbury—Wicomico County Board of Education School; Roland Dashiells, Salisbury, (low bidder)	144,000
Missouri—U. S. Engineer Office Clearing land; R. Newton McDowell, Kansas City, (low bidder)	185,000
Mo., Clarksville—U. S. Engineers Dam No. 24; Central Engineering Co., Davenport, Iowa, Contr.	2,699,000
Mo., Fulton—Missouri State School for Deaf Primary school and dormitory; McCarthy Brothers Construction Co., St. Louis, Contr.	170,000
Mo., Jefferson City—Board of Permanent Seat of Government State office building; Lehr Construction Co., Contr.	753,000
N. C., Greensboro—University of North Carolina Women's College Dormitory addition; George W. Kane, (low bidder)	209,000
Okla., Stillwater—State Board of Agriculture Engineering, biology buildings, (A. & M. College); Charles M. Dunning Construction Co., Oklahoma City, Contr.	430,000
Tex., Dallas—Sante Fe Building Air conditioning system; Airtemp Sales Corp. and Mehring & Hanson, Contrs.	127,000
Tex., Galveston—Public Free Schools Junior high school; Knutson Construction Co., Houston, Contr.	440,000
Tex., Tyler—McKenna Hotel Co. Office building; H. E. White, Contr.	100,000
Va., Norfolk—Bureau of Yards and Docks Cofferdam; McLean Contracting Co., Baltimore, Md., Contr.	145,000
Va., Richmond—Frank S. Richeson Apartment; A. Lloyd Goode, Charlotte, N. C., Contr.	830,000
Va., Virginia Beach—Gay Manor Hotel Hotel; Conrad Brothers, Norfolk, Contr.	100,000
Ala., Homewood—Valley Exchange Club and City Council Housing project	1,000,000

Proposed Construction

Arkansas—U. S. Engineers Levees	$2,659,000
Ark., Blytheville—Swift & Co. Cotton seed and soybean oil mill;	400,000
D. C., Washington—Capital Gardens, Inc. Sports center;	300,000
D. C., Washington—Doctors' Hospital, Inc. Hospital; Francisco & Jacobus, New York, Archts.	1,000,000
Fla., Miami—Fleischer Studios, Inc. Motion picture plant; C. Sheldon Tucker, Archt.	5,000,000
Fla., Miami—Tropical Builders, Inc. Dwellings;	1,000,000
Ky., Paducah—City Commission and McCracken County Medical Society Hospital; E. T. Hutchings, Louisville, Archt., and G. Tandy Smith, Consit. Archt.	500,000
Md., Baltimore—Ring Construction Co. Apartment houses; Harvey Warwick, Washington, D. C., Archt.	1,000,000
Md., Baltimore—South Baltimore General Hospital Hospital addition; Palmer & Lamdin, Archts., and Herbert G. Jory, Asso. Archt.	250,000
Miss., Rolling Fork—J. C. Russell Cotton compress;	100,000
Mo., Cape Girardeau—St. Francis Hospital Addition; Ralph P. Ranft, St. Louis, Archt.	175,000
Mo., Kansas City—City Produce terminal market; Frederick C. Gunn, Archt.	500,000
Mo., Kirksville—Northeast Missouri State Teachers' College Administration and demonstration buildings; Bonsack & Pearce, Inc., St. Louis, Archts.	300,000
North Carolina—Veterans Administration Hospital;	1,500,000
N. C., High Point—City Hydro electric plant;	5,300,000
Okla., Vinita—Northeastern Oklahoma State Hospital Dining Hall; J. B. White, Ardmore, Archt.	150,000
S. C., Charleston—Roper Hospital Additional buildings;	450,000
Tenn., Chattanooga—Board of City Commissioners City-County hospital work;	125,000
Tenn., Chattanooga—City and Hamilton County Workhouse for women; Tom Street, Archt.	100,000
Tenn., Chattanooga—Electric Power Board Transformers;	105,000
Tenn., Gatlinburg—Wallace Brooks Water and sewer system; Campbell Wallace, Knoxville, Engr.,	307,000
Texas—Harvey Gilbert Airport;	1,400,000
Texas—Sunray Oil Co. and Phillips Petroleum Co. Natural gasoline plant;	500,000
Tex., Beaumont—Hotel Beaumont Air conditioning system; Leo S. Weil and Walter B. Moses, New Orleans, La., Engrs.	100,000
Tex., Coleman—Coleman County Rural Electrification Cooperative Rural lines; William G. Morrison, Waco, Engr.	100,000
Tex., Corpus Christi—Mammoth Producing & Refining Co. Oil refinery;	250,000
Tex., Forth Worth—City and Tarrant County City-County Hospital; W. G. Clarkson & Co., Archts.	500,000
Tex., Fort Worth—Broadway Church Sunday school; Preston M. Geren, Archt.-Engr.	100,000
Tex., Houston—Armour & Co. Packing plant;	1,000,000
Tex., Houston—Claude B. Hamill Dwelling; John Staub, Archt.	150,000
Tex., Houston—Nowery J. Smith Oil well supply house;	150,000
Tex., Houston—Joe Steel Apartment;	100,000
Tex., Robstown—City Light and power plant and gas distributing system; Garrett Engineering Co., Houston, Engrs.	350,000
Tex., San Antonio—City Market house; De Haven Pitts, Archt.	170,000
Va., Alexandria—City Elementary school;	150,000
Va., Norfolk—Khedive Temple Temple building;	100,000
Va., Norfolk—Rice's Fashion Corner Modernization;	100,000

Long Distance rates STEP DOWN EVERY EVENING AND ALL DAY SUNDAY

In the evening, after the day's duties are done . . . on Sunday, when the week's worries are over . . . *these* are especially pleasant times to bring far friends near and link scattered families *by telephone.*

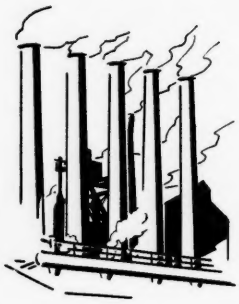
Long Distance rates step *way down* after seven in the evening and all day Sunday. It takes little time and little money to *talk* to some one it would take hours and dollars to *visit.* Go there and *back* by telephone. Call after $even or on $unday—and $ave.

HERE'S HOW LITTLE IT COSTS TO TELEPHONE!

BETWEEN THESE POINTS		AT NIGHT AND ON SUNDAY★
BALTIMORE, MD.	PHILADELPHIA, PA.	$.35
CHICAGO, ILL.	INDIANAPOLIS, IND.	.45
LANSING, MICH.	WHEELING, W. VA.	.60
BIRMINGHAM, ALA.	NEW ORLEANS, LA.	.70
ATLANTA, GA.	KANSAS CITY, MO.	1.20
SEATTLE, WASH.	DENVER, COLO.	1.80
LOS ANGELES, CAL.	DES MOINES, IOWA	2.50
SALT LAKE CITY, UTAH	WASHINGTON, D. C.	3.25
BOSTON, MASS.	SPOKANE, WASH.	4.00

★ 3-minute station-to-station rates . . . in effect from 7 P.M. to 4:30 A.M. every night and all day on Sunday.

Iron, Steel and Metal Market



WHILE the operating rate of steel companies declined to 29.3 per cent in the last week of February, the feeling is that better buying and better conditions generally will be experienced as spring advances. The bright spot has been Birmingham where steel production remained above 60%.

It is anticipated that some active buying of steel by automobile manufacturers will soon be in evidence. This is likely because stocks are at a low point and prices for the second quarter are definitely known. It is probable that the campaign which automobile companies are undertaking to rid dealers' floors of used cars will improve the situation and give freer play to the demand for later models. Reports from Detroit indicate automobile companies are more encouraged over the outlook than they have been. There already has been some slight improvement in buying. In February sales were considerably above January.

Railroads need a lot of new equipment and the general comment is that if the Interstate Commerce Commission grants the rate increases which the railroads are asking, orders in quantity will be placed for rails.

The Association of American Railroads reports on January 1st there were 7,947 new freight cars on order besides 110 new steam locomotives, 21 new electric and diesel locomotives February 1st. In January the railroads installed 2,148 new freight cars.

The Bureau of Foreign and Domestic Commerce reports exports of iron and steel products, including scrap, continued in January at close to the record average of 1937. The figures of January, this year, were practically double those of January, 1937. There was a decline compared with December, 1937 but this was accounted for by a drop in tin plate, ingot and rail shipments.

Scrap exports in January totaled 356,537 tons which was nearly 40,000 tons above December, 1937, and was nearly five times the tonnage exported in January of 1937. European markets continued to take the bulk of the shipments, 128,000 tons going to the United Kingdom, while the Netherlands received 58,000 tons and Italy 47,000 tons.

Reports from Birmingham told of two additional blast furnaces being placed in operation by the Tennessee Coal, Iron and Railroad Company which brought the total to 13 in the district.

It is understood orders have been placed with the United States Pipe & Foundry Company for its Bessemer and Chattanooga plants for 5,000 lengths of eight-inch pipe for the Chicago municipal water works.

At Birmingham a convention of leading metallurgic and foundry men was held. There was a symposium on the mechanics of the cupola furnace and equipment under the auspices of the Birmingham sections of the American Society of Mechanical Engineers and American Foundrymen's Association. It was the 6th annual joint foundry practice meeting. There was an inspection tour of the industrial plants of the district.

Birmingham reports state 2,000 men are expected to return to work early this month at the Tennessee Coal, Iron and Railroad Company's red ore mines and prospects for further increases in employment are said to be bright. There have been test operations of the hot-strip mill of the Tennessee Company showing progress in the completion of the expansion work at Fairfield where a huge program of improvement is under way.

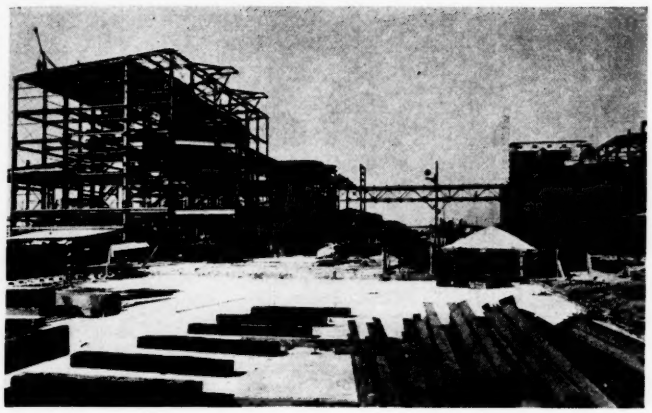
While orders throughout the country in steel have been in comparative small quantities they have probably totaled more than the amount being produced. Two thousand tons of reinforcing steel was divided between the Republic Fireproofing Company, Inc., and the American Steel Engineering Company. Four thousand, two hundred and eighty tons of structural steel are required for various projects at the World's Fair, New York. An apartment building will take 1,050 tons. A bridge at Omaha 4,000. A dam in Palo Pinto County, Texas will require 1,135 tons of shapes and 4,500 tons of reinforcing steel.

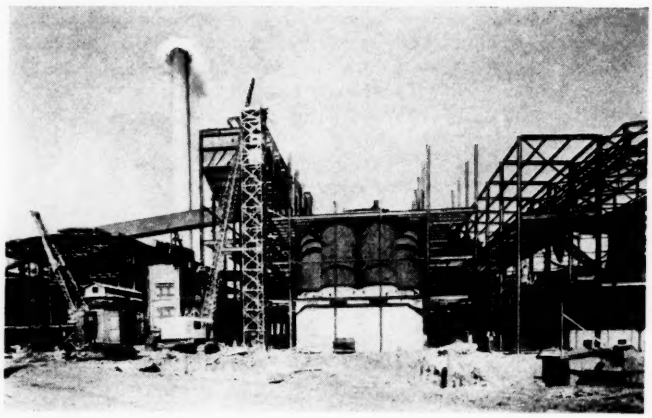
In other metals during the month the export copper price got above 10 cents, domestic prices holding around the 10 cent figure. In lead a fair activity was reported with prices from $4.35 to $4.50 a pound. Zinc was quiet with the price around $4.75.

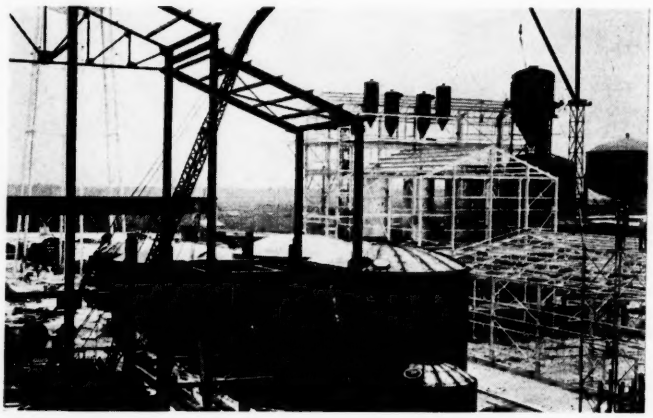
Directors of the United States Steel Corporation are to submit to the stockholders for voting April 4th changes in the by-laws that will permit future financing to be done either through the issuance of common stock or offerings of convertible securities. It is proposed to alter the par value of the common stock from $100 to no par value and increase the amount authorized from 12,500,000 shares to 15,000,000 shares. There are no immediate plans for new financing but the board pointed out that common stock-holders will have subscription rights pro rata for any common stock or convertible obligations. The directors are to be allowed to issue the common at any price deemed desirable or to issue obligations which may be convertible into common at such prices they consider advisable when issued. Common stock will be carried in the Company's statement at $75.00 a share.

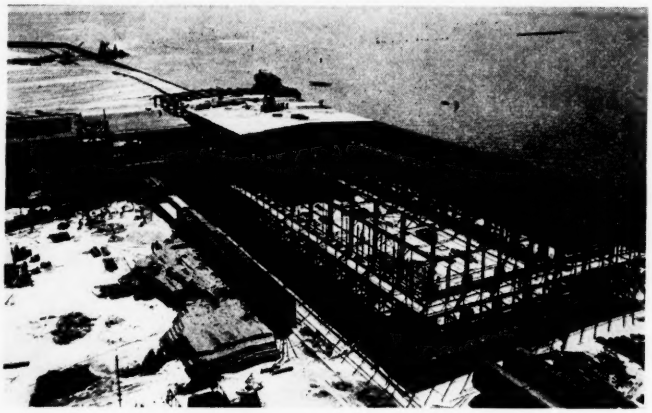
Tom M. Girdler, chairman of the Republic Steel Corporation, expressed the opinion that America is ready to move forward provided confidence is restored by permitting our industrial and economic systems to function free from harrassments and oppressive control. He gave as one of the reasons for the recession the growing attitude of the government that business is exclusively the vehicle of a few wealthy people and something separate and distinct from the public.

As other reasons for the recession he cited punitive taxes, spreading labor disturbances, and rising costs of production. These factors "combine to cloak the future in uncertainty." Mr. Girdler while in California in February spoke before the conference of Iron, Steel and Allied Industries of the California State Chamber of Commerce. He further remarked "In February industry shows some improvement and there are signs of further gains with the approach of spring. Steel prices must be adequate to enable my company to pay good wages, to keep its plants in good repair and up to date and to earn a fair return upon the capital invested in the business. Wages and prices are inseparably linked. It would not be possible for any steel company to maintain prices on a lower level while present wages remain unchanged. If industry were to be forced to pay wages it cannot afford, the whole industrial system would surely break down."









Paper Becomes A Southern Crop

Using Southern slash pine, a very fast growing wood, the Paper Industry is pointing to the South as an important and permanent factor for the future production of paper and woodpulp.

A number of large plants have been built and more are to follow.

As usual Virginia Bridge has had a large part in this construction just as it has had in Southern bridge and building construction generally for more than 40 years.

VIRGINIA BRIDGE COMPANY
Roanoke Birmingham Memphis Atlanta
New York Dallas El Paso

VIRGINIA BRIDGE

Four paper mills in a row—for which Virginia Bridge recently furnished the steelwork, more than 14,000 tons—reading from the top down:

1. West Virginia Pulp & Paper Co., Charleston, S. C. Morton C. Tuttle Co., Boston, Gen'l Contr's.
2. Union Bag & Paper Corp. of Ga., 2nd & 3rd units, Savannah, Ga. Merritt-Chapman & Scott Corp., New York, Gen'l. Contr's.
3. Brunswick Pulp & Paper Co., Brunswick, Ga. Stone & Webster Engineering Corp., Boston, Gen'l. Contr's.
4. St. Joe Paper Co., Port St. Joe, Fla. James Stewart & Co., New York, Gen'l. Contr's.

Lumber

News of the Month

Sawtimber and Cordwood in North Georgia

Another of the Southern Forest Survey publications has just been released dealing with the sawtimber and cordwood volumes in north Georgia. This region embracing 21 counties and comprising 4,267,500 land acres, includes 2,835,300 acres of forest land which is approximately 66.4 per cent of the total area.

Pine (38.7 per cent) and mixed pine-hardwood (23.5 per cent) forests are characteristic of the area with pure hardwood (37.8 per cent) stands confined largely to the upper slopes of the higher mountains and to stream bottoms. Shortleaf pine is the most common of the coniferous species though loblolly and Virginia pines are widely distributed. Of the hardwoods, oaks and hickories occur generally while yellow poplar, gums and maple are common in stream bottoms, on lower slopes and in sheltered coves.

The sawtimber stand of the unit totals over 3¼ billion board feet, of which about 2 billion feet is pine and 1¼ billion feet is hardwood. Second growth stands contain 81 per cent of the pine and 55 per cent of the hardwood.

Of the total 35 million cords, 28 million are in good trees, almost equally divided between the pines and hardwoods. Oaks and hickories make up a large portion of the hardwood volume, while less than one-sixth is in species considered suitable for pulping. Of the 7 million cords of sound material in cull trees, the greater portion is in hardwoods. In addition it is estimated that there are 2¾ million cords of sound chestnut in this unit, the major part of which is in dead trees.

In the early part of 1937, the forest industries in this part of the State included 345 small sawmills and 11 establishments producing staves, heading, package veneer, or shuttle-blocks. In addition, a pulp mill at Canton, N. C., draws pulpwood from the section. The sawmills were cutting principally pine, while the hardwoods are cut for lumber, cross ties, veneer, handle stock, and cooperage.

Southern Pine Trends

There are no sharply defined trends in Southern Pine production and demand. The movement is sidewise, with production adjusted nicely to demand. The "Weekly Trade Barometer" of the Southern Pine Association shows orders in excess of production in six of the first seven weeks in 1938. The seven weeks' total for production, as reported by 110 mills, is 170,525,000 ft., against 202,060,000 ft. in the like period of 1937, a decline of 16%. Orders booked in the first seven weeks of 1938 total 189,878,000 ft., against 224,399,000 ft. in the like period of 1937, a decline of 15%. Orders this year exceed production by 11%, and in the same period last year they exceeded production by 11%. Production last year was speeded up to plug stock shortages in anticipation of an unrealized boom in demand. This year, operators apparently are more cautious, and with stocks at normal levels production will continue to trail demand until there is evidence of a sustained large business. Comparison for the first seven weeks of 1937 and 1938, follows:

Week Ended	No. Mills	PRODUCTION M. Bd. Ft. 1938	PRODUCTION M. Bd. Ft. 1937	Percent Change	ORDERS M. Bd. Ft. 1938	ORDERS M. Bd. Ft. 1937	Percent Change
Jan. 8	103	21,654	26,308	—18	21,096	27,968	—25
15	115	23,954	27,211	—12	29,825	32,347	— 8
22	102	22,077	24,826	—11	29,964	32,791	— 9
29	109	25,277	27,836	— 9	29,744	36,536	—19
Feb. 5	117	23,967	29,295	—18	25,379	32,206	—21
12	115	26,573	32,005	—17	26,805	32,996	—19
19	109	27,023	34,579	—22	27,065	29,555	— 8
Total 7 Wks.	110	170,525	202,060	—16	189,878	224,399	—15

When it is remembered that the first quarter of 1937 showed the best record since 1930, the performance so far in 1938, following the low fourth quarter of 1937, is not bad. In the fourth quarter of 1937 orders were 67% of their 1929 average, while in the first seven weeks of 1938 they were 80% of 1929. Thus, 1938 to date shows substantial improvement over late 1937 trends.

Stocks of Southern Pine at 109 mills, on February 19, 1938, totalled 511,492,000 ft., or about 5% above normal. Last year at this time stocks at these mills were about 24% below normal. The gain over a year ago is 38%, making current inventories well assorted and available for prompt shipment in the event of any sharp rise.

Southern Pine prices, f.o.b. mill, in January 1938, were down 17% from January 1937 and off 18% from the average for the year 1937. The following table, based on average realization of some 40 large Southern Pine mills, shows the trend of prices beginning with 1926:

Year or Month	*Average Per M. Ft. F.O.B. Mill*	*Index Relative to 1926*
1926	$30.86	100.0
1927	29.09	94.3
1928	28.57	92.6
1929	29.78	96.5
1930	26.14	84.7
1931	18.35	59.5
1932	14.68	47.6
1933	19.21	62.2
1934	25.92	84.0
1935	22.24	72.1
1936	24.48	79.3
1937	28.45	92.2
1938 (January)	23.28	75.4

Current prices f.o.b. mill barely return the cost of production and the outlook and trend is toward higher levels.

The Southern Pine industry enjoys a relatively strong and sound statistical position, and many foresee definite improvement in the Spring. There is nothing fundamentally wrong with supply and demand. The difficulty as economic authorities see it, has been in external influences which tend to retard the free flow of supply and demand. As these diminish business is expected to improve.

Slash Pine Experiment

With a view to determining the value of planted slash pines for the naval stores industry, an experiment has recently been started near Macon, Georgia.

The project, originated by Dr. Charles H. Herty, was launched by T. A. Liefield of the Lake City, Florida, Southern Forest Experiment station and will ascertain the possibilities of extending the naval stores industry into the lower Piedmont region. Cups have already been hung and it is believed that the results should be know in about six months.

AMCRECO
Creosoted Products offer
ASSURANCE of RELIABILITY

Pearl River Bridge—Louisiana

MODERN construction projects should be protected against the menace of timber decay and natural deterioration. AmCreCo pressure treated piles, poles and timber give that protection with the additional advantage of economy, found in low first cost, reduced maintenance expense and long life. AmCreCo creosoted products have maintained their same high standard of quality for over thirty years. They are today, as in the past, made of sound timber, treated with only time tested and proven preservatives. The reputation of AmCreCo pressure treated piles, poles and timber will always be guarded by this same strict policy. Their use is a definite guarantee of satisfaction. Information will be sent upon request.

AMERICAN CREOSOTING COMPANY
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AMCREco LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

ADDRESS INQUIRIES TO CHICAGO, ILL., OR LOUISVILLE, KY.

Good Roads and Motor Transport

Truck Use of Proposed Super Highway

It is reported that a study is under way to determine whether interstate trucks could be compelled to travel on the superhighway toll road contemplated in the bill introduced by Senator Robert J. Bulkley.

The bill, in which President Roosevelt has expressed interest, would provide for construction of an arterial system of highways throughout the country extending from north to south and from Atlantic to Pacific at an estimated cost of $2,000,000,000. The "self liquidating" feature of the measure would be imperiled, it is believed, as would the proposed bill itself unless it should be found possible to compel interstate trucks to use the road and pay the tolls.

Supreme Court Upholds South Carolina Truck Regulations

In upholding the constitutionality of South Carolina's law limiting the width and gross weight of trucks, the Supreme Court ruled that "There are matters of local concern, the regulation of which unavoidably involves some regulation of interstate commerce, but which, because of their local character and their number and diversity may never be wholly dealt with by Congress. Notwithstanding the commerce clause, such regulation in the absence of congressional action has for the most part been left to the states."

This South Carolina law limiting the width of trucks to 90 inches and their weight to 20,000 lbs. was attacked by a number of truckers and trucking concerns and had been restrained from enforcement by a U. S. District Court on the ground that it placed a burden on interstate commerce. Referring to this particular phase, the Supreme Court pointed out that "so long as the state action does not discriminate [against interstate commerce], the burden is one which the constitution permits because it is an inseparable incident in the exercise of a legislative authority which, under the constitution, has been left to the state." The court also held that Congress "may determine whether the burdens imposed on interstate commerce by state regulation are too great, and may curtail to some extent the state regulatory power "But that is a legislative, not a judicial function—."

A resolution is now before the South Carolina legislature which would authorize the highway department to take no action in enforcing the law until further consideration is given to the regulation of trucks.

Though it is said that between 85% and 90% of trucks used in interstate commerce have a width of 96 inches, the Supreme Court held that the width limitation was not unreasonable in view of the fact that about 100 miles of South Carolina roads are only 16 feet wide. It was further pointed out that about 60% of the State's highways are without a longitudinal center joint and consequently are unusually thin—from one to two inches thinner than are the outside edges.

Road Fund Diversion

Opposition to the diversion of road funds continues to grow. Colorado, Kansas, Missouri, and Minnesota have already passed amendments to their respective constitutions prohibiting diversion while Maine has a referendum law approved by the voters which amounts to virtually the same thing. In Alabama and California a proposal has passed the legislative sessions and now only awaits the next general election vote. In Indiana and Nevada, the measure has passed the first session.

The latest state to join this group is Virginia where a resolution to prohibit diversion of highway funds by constitutional amendment has recently been reported favorably to the senate by its courts of justice committee.

Durability of Roads To Be Studied

In an effort to determine the durable life of highways, 45 states are now engaged in a systematic study of approximately 300,000 miles. Carried out in cooperation with the U. S. Bureau of Public Roads, the project when completed will present a detailed account of the cost of construction, cost of maintenance, length of life as well as numerous other factors.

New North Carolina Road Rule

An ordinance has recently been passed by the state highway and public works commission of North Carolina whereby division engineers are authorized to place load limits on highways when weather conditions demand protection against heavy traffic. According to Frank L. Dunlap, Commission Chairman, the ruling will also permit the engineers to re-route the traffic, providing the period involved does not exceed ninety days.

Safety of Highway Travel Increased in 1937

Although traffic fatalities numbering 39,700 in 1937 constituted 36 per cent of all accidental deaths representing an increase of four per cent over 1936, deaths per thousand miles of travel showed a decline of three per cent, according to the American Petroleum Institute.

Highway deaths per 10,000,000 gallons of gasoline consumed in 1937 stood at 20.4, a decline of three per cent from 1936 and the lowest rate for any year since 1925. Despite the fact that the number of automobiles on the highways in this country has increased 45 per cent since 1925, the highway fatalities per ten million gallons of gas consumed have decreased by 20 per cent.

One-Third Highways of World in United States

The United States has approximately 3,065,000 miles of highways, or nearly one-third of the world total of about 9,687,000, according to a survey of world highways just completed by the Automotive-Aeronautics Trade Division of the U. S. Department of Commerce.

In countries covered by the survey there were registered about 40,549,000 motor vehicles of which the United States had 28,520,500 or more than two-thirds of the world total on January 1, 1937.

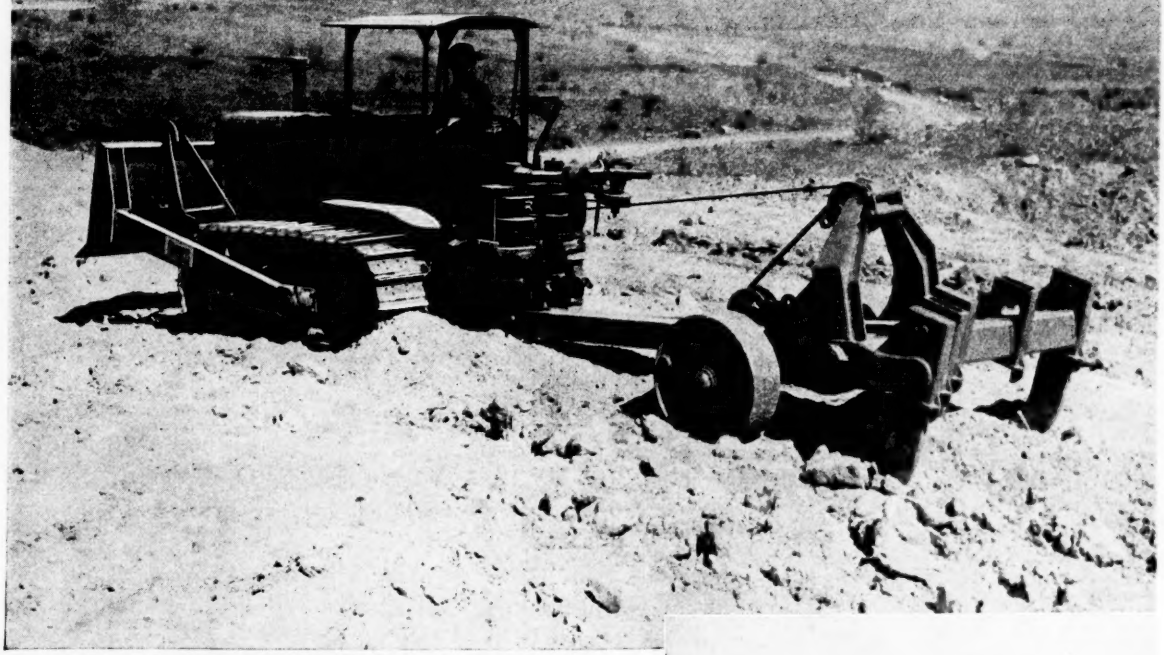
At the close of 1929 the world total for highways was about 6,582,000 miles and the motor vehicle registration about 32,034,600 units. Thus in a period of eight years the highway mileage of the world has increased more than 3,105,000 miles and the number of motor vehicles registered increased approximately 12,028,400.

The use and the number of motor vehicles is progressing at a faster rate than the extension of new highways while in nearly every country highway authorities are faced with a steady growth of traffic congestion, due to inadequate street and highway facilities.

Make

INTERNATIONAL INDUSTRIAL POWER

Your Partner in COST CUTTING



Above: An International TD-40 Diesel TracTracTor ripping the surface to get at the deposit of gypsum in the mines of the United States Gypsum Co. at Midland, Calif. *Right, below:* The TracTracTor building a mountain road near the gypsum mines.

INTERNATIONAL HARVESTER builds a complete range of power and transportation equipment. *Crawler tractors, wheel tractors, power units, and motor trucks* . . . all are available under the International banner, and all have the same *International Harvester quality* built into them from end to end. Pick your equipment from this one broad line and make sure of outstanding performance. And there is *service,* too, to think about. International dealers and Company-owned branches know all about the service needs of heavy-duty equipment, and maintain service departments and parts stocks that meet every requirement. The nearby International dealer or branch will give you complete information.

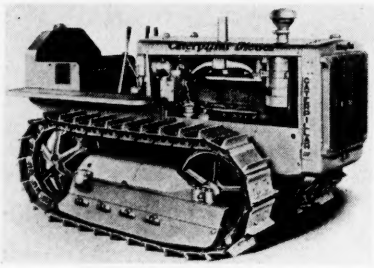
INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 North Michigan Avenue Chicago, Illinois

INTERNATIONAL Industrial Power

New Ways of Doing Things

Smaller "Caterpillar" Diesel Tractor

In the announcement by Caterpillar Tractor Company, Peoria, Ill., of a new smaller track-type tractor, the Diesel D2, there is brought to new thousands of farm and industrial tractor users a machine that is claimed to offer from 60 to 80 per cent savings in fuel cost, with low operating expenses. In agriculture, the new machine will pull three to four



Small Diesel Tractor

plow bottoms, and in construction work it will handle light blade graders, maintenance machines, scrapers, etc. The tractor is of the conventional four-stroke cycle, unusually accessible for necessary mechanical adjustments and maintenance, with only three working adjustments to be made—the water pump, fan belt and valve clearance. Fuel injection pumps and valves are set at the factory.

Combination Standlite For Service Stations

Designed to provide proper illumination for gasoline service stations, both for the area around pump islands and for floodlighting buildings, in a practical and economical way, a new Goodrich Combination Standlite has been developed by Goodrich Electric Company, Chicago, Ill. The Combination Standlite is arranged for both vertical and lateral adjustment, and is equipped with a water-tight glass lens.

Largest Span All-Welded Crane

The Cleveland Crane and Engineering Company, Wickliffe, Ohio, is building fifteen Cleveland All-Welded Mill-Type Cranes, each of 15 tons capacity, and span of 120 feet. Ten of the cranes are now under construction, and up to date, are said to be the world's largest span all-welded units. Every major section, such as the two girders, the four end trucks, trolley, cage, etc., is fabricated into a rigid one-piece unit by welding. Bolts are used to tie the major sections together only because of shipping and erection limitations. Each girder weighs 72,000 pounds and has an actual over-all length of 122 feet, with a maximum depth of 6 feet, 6 inches. Steel plates up to 1¼ inches thick are used. The completed crane weighs 275,000 pounds.

For Placing Concrete Pneumatically

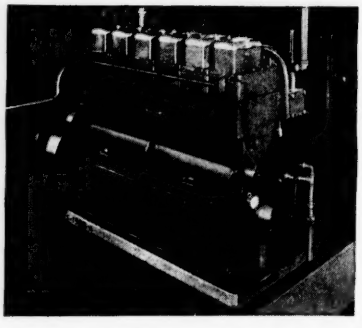
One of the newest products of the Hercules Steel Products Company, Galion, Ohio, is the Crete-Mobile, a truck-mounted and truck-operated machine for placing concrete pneumatically. Equipment is operated by a truck motor through a Hercules Power Take-Off, the entire combination consisting of truck, body, air compressor, water tank, mixing tank, hose and discharge nozzle. Application for the unit may be found in the construction and repair of highways, bridges, culverts, sidewalks, curbs, gutters, tunnels, etc., and in applying protective coatings to concrete and steel.

Segal Pick-Proof Lock

Described as so ingeniously constructed that it cannot be opened by anything save the owner's key, a non-pickable lock has been developed by Samuel Segal, former detective of the New York Police Department, who invented the well known Segal Jimmyproof Lock. The new lock has gone through a series of tests by the Underwriters' Laboratories and is declared to be non-pickable. Its widening use is expected to have a substantial bearing on insurance rates. The Segal Lock and Hardware Company, Inc., New York, N. Y., which will control the patent on the lock throughout the world, is arranging to license it to manufacturers.

Vertical Four-Cycle Gas Engine

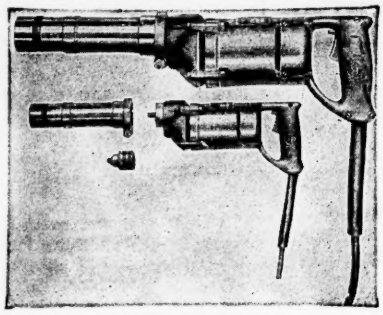
Conservatively rated as a small gas engine, a vertical, four-cycle, Type AG engine has been developed by Worthington Pump and Machinery Corporation, Harrison, N. J., to meet increasing demand for a heavy-duty, moderate-speed engine for such services as: electric generating, air and gas compressor drive, oil field pumping, refrigeration and ice plants, irrigation, saw mills, and cotton gins. Outstanding features of the unit are valve-in-head construction, total enclosure of all moving parts, removable cylinder liners, separate water-cooled cylinder heads, light weight, force-feed lubrication, etc.



Small Worthington Gas Engine

Combination Electric and Hammer Drill

Chicago Pneumatic Tool Company, New York, N. Y., announces a new 5/16-inch Heavy Duty Universal Drill that can be converted in a few seconds to a self-rotating Hammer Drill (and vice versa) of ½-inch capacity in concrete, brick, stone, etc. It may also be used for light chipping by applying a lock collar to stop rotation.



Convertible Electric and Hammer Drill

Goodrich Dome Diffuser

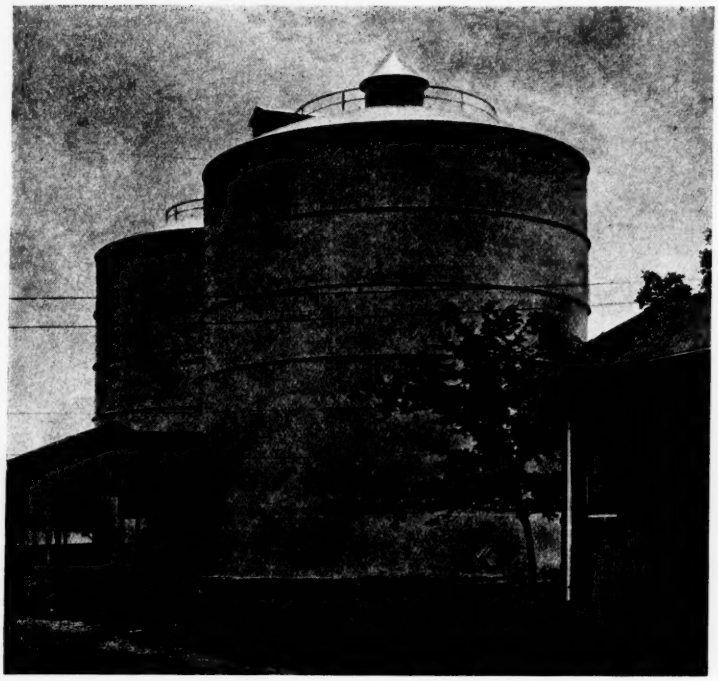
To meet requirements for a soft, well-diffused illumination, a Goodrich Dome Diffuser using bowl-silvered lamps which provide an unusually high quality of indirect light has been developed by Goodrich Electric Company, Chicago, Ill. The 20-inch reflector is finished in white porcelain enamel inside and outside, designed to distribute light over a wide area, while an aperture between the reflector and hood directs a part of the light upward to the ceiling, thus minimizing sharp contrasts of light and shadow. The diffuser is offered in two types of hoods, both types accommodating lamps of 200, 300, and 500-watt sizes.

Portable Electric Protectograph

The Todd Company, Inc., Rochester, N. Y., manufacturers and distributors of bank supplies, recently introduced a new portable Electric Protectograph, an office machine weighing less than 30 pounds and capable of writing 1200 checks an hour.

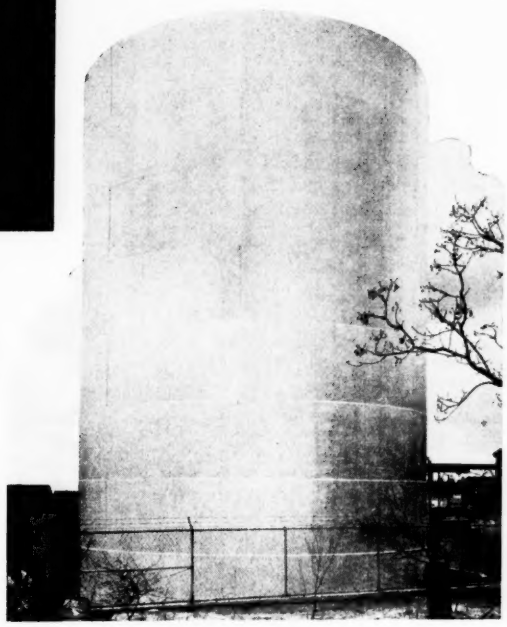
Portable Electric Hoist

Under the trade name of "Budgit," a new light weight portable electric hoist of 500 pounds lifting capacity has been introduced by Shaw-Box Crane and Hoist Division of Manning, Maxwell & Moore, Inc., Muskegon, Mich. The hoist, complete, weighs 58 pounds and is believed to be the first electric hoist weighing less than a hand-operated spur-geared chain hoist of equal capacity. Of simple design, the hoist is totally enclosed with gearing operating in an oil bath.



Left: Two 60 ft. diameter by 60 ft. high cottonseed storage tanks of welded construction at the Uniontown Cotton Oil Company mill at Uniontown, Ala. They have a total capacity of about 5,500 tons.

Below: Cotton oil storage tank of welded construction. It is 40 ft. in diameter by 60 ft. high.



STEEL TANKS

of Welded Construction at Cotton Oil Mills

Welded steel tanks are used extensively to store cottonseed. Installations are usually 60 ft. in diameter by 60 ft. high with self-supporting roofs.

A typical installation is illustrated above. The seed is unloaded pneumatically into the boot of an elevator which is located between the tanks. The elevator discharges it into a horizontal conveyor which carries it to the cupola of either tank.

The seed in these tanks is ventilated during the storage period by drawing air through it. This is done automatically by operating the unloader fan with the suction side connected to air ducts in the floors of the tanks. This makes it easy to keep the cottonseed in first class condition at all times.

Cotton oil mills have also found it advantageous to have adequate capacity to store their oil for some time if necessary. When the market is low a mill can increase its income by holding its output until prices improve. Welded tanks like the one illustrated above are built in standard capacities or special sizes to meet your requirements.

In addition to tanks for storing cottonseed and cotton oil, we build elevated water tanks for general service and fire protection in a complete range of standard capacities. Write our nearest office for information or quotations on any of these tanks fabricated in our Southern plant at Birmingham and erected complete at your mill.

CHICAGO BRIDGE & IRON COMPANY

Birmingham .....1530 North Fiftieth Street	New York .....3313-165 Broadway Bldg.	Philadelphia .....1619-1700 Walnut Street Bldg.
Dallas .....1408 Liberty Bank Bldg.	Cleveland .....2216 Rockefeller Bldg.	Detroit .....1510 Lafayette Bldg.
Houston .....2919 Main Street	Chicago .....2106 Old Colony Bldg.	Boston .....1510 Consolidated Gas Bldg.
Tulsa .....1611 Hunt Bldg.	San Francisco .....1040 Rialto Bldg.	Havana .....Edificio Abreu 402

B-563

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.

Selection of Pulverized Coal Equipment

(*Continued from page 29*)

ments. Possible moisture to consider, may be affected by—

- Original moisture in coal as taken from mine.
- Location of plant with reference to mines.
- Opportunity for taking on moisture in transit from either rain or snow.
- Storage of coal at plant either in open pile or under cover.

Since moisture in coal not only reduces pulverizer capacity, but also increases power required to pulverize a given amount, all feasible means should be taken to keep moisture to a minimum. Certainly water should not be added to coal, as is frequently done in stoker firing. Hot air in the pulverizer tends to evaporate moisture from coal during pulverization and thereby partially compensates for the effect of moisture. However, it is necessary that hot air come into as intimate contact with the coal as quickly as possible after the coal leaves the feeder, in order to be most effective.

Abrasiveness

There is frequently confusion as between grindability and abrasiveness. These terms are not synonymous, nor is there any apparent relation between them. Grindability is simply an indication of how hard or how easy a given coal can be reduced to a given fineness. Abrasiveness is a characteristic of coal that determines how rapidly the pulverizing parts of the pulverizer wear out. Some very hard coals having low grindability index may be considerably less abrasive than some other soft coals having a high grindability index.

Certain mid-western coals having a grindability index of 60 to 65 may wear out pulverizer parts several times as fast as certain eastern high volatile coals having a grindability index of 50.

Abrasiveness is more a function of the amount and character of ash and foreign material in coal. Ash in some cases, even though considerable in amount, may be hardly more abrasive than the coal itself. Ash in some other coals is extremely abrasive. An analysis of a given coal does not give a definite indication or measure of abrasiveness. However, the percentage of sulphur will usually give some clue. Generally, high sulphur is an indication of large quantities of iron pyrites. Iron pyrites is very abrasive.

Certain plants are located in regions where the most available coal is highly abrasive. The effect of this abrasiveness is to require frequent renewal of pulverizer parts and to increase the cost of these parts. Such coals can be used to produce overall boiler efficiencies practically the equal of that of the best coals obtainable. Therefore, in localities where such coals occur, it is desirable to compensate for this characteristic by installing pulverizers somewhat larger than would be used with less abrasive coals, thereby increasing the time between replacement of pulverizer parts, maintaining better fineness of pulverization, and maintaining the same power consumption for driving the pulverizers during these periods.

Ash

Ash in different coals occurs in various percentages, in various abrasive characteristics and with various fusion temperatures. All of these characteristics of ash affect performance of equipment. Allowance for these characteristics must be made in design and selection of equipment.

The effect of quantity of ash is to require a greater amount of coal to be pulverized and thereby to require larger capacity pulverizers to be used. The larger the ash content the greater is the amount of ash to be removed from the furnace bottom, the back pass of the boiler, and from the breeching. In some cases the discharge of ash from the boiler stack constitutes a nuisance. Obviously the greater the amount of ash, the greater the probability of difficulty in this account.

Fineness of Pulverization

In general, the more finely the coal is pulverized the more completely will the combustible matter be burned. However, it does not pay to pulverize coal in a given case beyond a certain degree of fineness. The gain that is realized in efficiency by more complete combustion of combustible material may be more than offset by increased power required to secure increased fineness and by decreased capacity of pulverizer equipment. A given pulverizer may have ability to pulverize a certain amount of a certain coal to a certain fineness. If, however, the same pulverizer is required to pulverize the same coal to a greater degree of fineness, a less amount of this coal can be pulverized. In other words, the capacity of the pulverizer is decreased. The most economical fineness may differ among plants. Nevertheless, certain general rules may be stated. High volatile eastern coals of low grindability should be pulverized so that from 70 to 75% will pass a 200 mesh screen. Low volatile eastern coals of high grindability should be pulverized so that 75% to 80% will pass a 200 mesh screen. Free burning midwestern coals need be pulverized only to 60% to 65% thru a 200 mesh screen. In selecting pulverizers for a plant it is necessary that the equipment will have sufficient capacity to pulverize the maximum amount of the lowest grindability coal to be used, to the necessary degree of fineness.

Furnace Design

In selection of pulverized coal equipment the design of the furnace is as important as the selection of the pulverizer. Furnaces may be constructed either entirely of refractory walls or the walls may be water cooled. The amount of water cooling may vary from a water cooled rear wall or wide spaced water tubes on side walls, to water cooling of such extent that practically a continuous metal surface encloses the furnace. Furnace bottoms may be flat, requiring that the ashes be raked or blown from the bottom or hopper bottoms may be employed to permit the use of automatic ash disposal. Usually hopper bottom furnaces have the slopes of the bottoms water cooled in order to prevent ash adhering to the slopes.

Furnace bottoms may also be classified as slag tap bottoms or dry bottoms. In the case of slag tap bottoms the ash is heated to a temperature greater than the fusion temperature of the ash and molten ash is tapped off. With dry bottoms it is desirable to maintain the temperature of the ash below the softening point.

The necessity for water cooling in any particular case depends upon the amount of coal to be burned in the furnace, the temperature at which the ash fuses, and the amount of water tube surface exposed to the furnace by the boiler.

If a given amount of coal of a given heat value is burned in a furnace a definite amount of heat is produced. The amount of heat produced is the number of pounds of coal burned per hour times the heat value per pound, less the heat of urburned carbon. A portion of this heat is radiated to and retained by the furnace envelope, a portion becomes latent and the remainder is sensible heat of the gases and evidenced by gas temperatures. The sensible heat retained in the gases may be such as to produce a temperature in these gases, greater than the fusion temperature of the ash. In such case the ash will become plastic or molten. In the case of dry bottom installations, molten ash is undesirable for many reasons. If, however, sufficient water tubes are applied to the furnace walls, sufficient heat can be absorbed from the gases to reduce their temperatures below that at which the ash fuses. Ash fusion temperature for most coals is fairly well known. In the design of an installation it is possible to calculate with a reasonable degree of accuracy the amount of water tube surface which should be applied to furnace walls in order to insure that fusion of ash will not occur.

Frequently boiler furnaces are designed with more water tube surface in the furnace walls than that merely required to maintain the temperature of the gases below the ash fusion point. There are a number of reasons for this. It is frequently more economical to construct furnace walls of water tubes backed up with refractory tile, insulation and steel casing than to construct a furnace of all refractory walls of a suitable design. A completely water cooled furnace of this construction has considerably less radiation loss, since the refractory and insulation is subjected on the furnace side to only the temperature of the water in the tubes rather than to the temperature of gases in the furnace. Furnaces of such design more completely eliminate air infiltration, than do refractory furnaces. Maintenance costs of such furnaces is much less than with refractory furnaces. If the tubes are kept clean, maintenance is practically eliminated.

The size of the furnace is determined by the amount of coal to be burned, the type of furnace design and ash fusion temperature. The type of furnace and ash fusion temperature determine the rate of heat release in the furnace. The rate of heat release is the amount of heat in the coal fired per cu. ft. of furnace space, per hour. Permissible rates of heat release, in rough figures, will range from 15,000 for all refractory furnaces with coals having ash fusion temperatures of 1900 or 2000 deg., to 25,000 or 30,000 with entirely water cooled furnaces and coals having fusion temperatures of 2500 deg. or higher. In the case of slag tap bottoms these rates may run as high as 35,000. If the amount of coal to be burned per hour has been determined, and the heat value of the coal and type of furnace is known, the volume of the furnace is determined by dividing the total heat in the coal fired per hour by the permissible heat release.

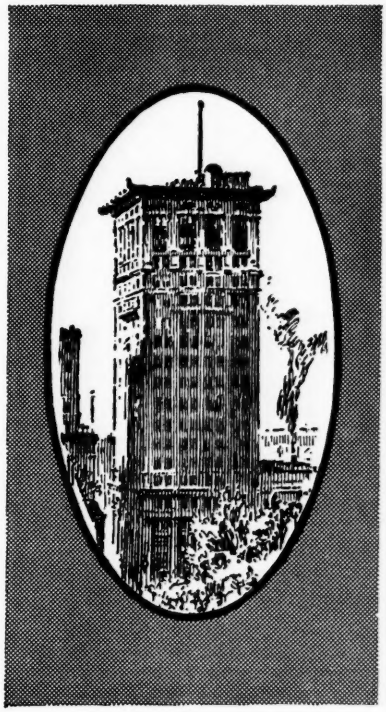
Burning of Powdered Coal in the Furnace

The function of the burner is to discharge powdered coal and air into the

(*Continued on page 60*)

Why Industries
COME TO VIRGINIA

Why did more than a hundred new industries come to Virginia in 1937? Because they wanted to take advantage of low taxes, proximity to raw-material sources and fine transportation by land and water. First and Merchants — Virginia's largest bank—provides ample banking facilities for industries based on 72 years of first-hand experience with manufacturing enterprises. We invite the inquiries of manufacturers.



FIRST AND MERCHANTS
National Bank of Richmond

John M. Miller, Jr., President

Capital and Surplus $5,700,000. • Member Federal Deposit Insurance Corporation.

$50,000 A DAY FOR TAXES

TAXES INCREASE 77%

1932	$10,242,037
1933	11,244,392
1934	13,052,284
1935	13,865,221
1936	15,250,813
1937*	18,191,860

*12 months ended Oct. 31.

• Taxes on companies in the Associated System amount to $18,191,860 a year or to $49,841 a day—holidays included.

Gigantic as is this total, it is not so alarming as the rate at which the tax burden is increasing. For the 12 months ended October 31, 1937, the increase over the previous 12 months was 28.6%. In the past 5 years taxes on companies now in the System increased 77%.

Utilities wish to contribute their share to the cost of government. But when taxes on utilities become excessive, the industry's credit is impaired, and it is unable to attract all the funds necessary for new construction. As a result, service to customers may suffer.

ASSOCIATED GAS & ELECTRIC SYSTEM

The ACI Family

A POCKET-SIZE booklet, listing the agents and the producers of Appalachian Coals, Inc., is now available to industrial purchasing agents and retail coal merchants.

Write for your copy. It is a guide to the sources of the "finest bituminous coals in the world," mined in eastern Kentucky, eastern Tennessee, southwestern Virginia and southern West Virginia.

Through the ACI organization and the fuel engineers of our constituent companies, buyers of both domestic and industrial coals have access to the latest information on coal technology. This Appalachian Service will simplify your coal application and utilization problems.

Send for your copy of "The ACI Family," listing ACI Producers, ACI Agents, seams, districts, et cetera.

Appalachian Coals, Inc.
TRANSPORTATION BUILDING · CINCINNATI, OHIO

MOUNT AIRY GRANITE
THE NORTH CAROLINA GRANITE CORP'N.
Mount Airy, N. C.

DRAWING MATERIALS
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Are You Planning For Future Growth?
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BALTIMORE COMMERCIAL BANK
GWYNN CROWTHER, *President*
BALTIMORE, MARYLAND
Member Federal Reserve System
Member Federal Deposit Insurance Corporation

» » » Finance « « «
AND KINDRED SUBJECTS

As to the $400,000,000 Move

The news of the month in financial circles had to do with the announcement of the Treasury Department that it would release in the next 12 months $400,000,000 in gold to be deposited in banks. The stated purpose is to ease the credit situation.

Under normal conditions a move of this kind might be very helpful, but the necessity for it is not apparent when the banks are overflowing with money and excess reserves are again approaching $1,500,000 notwithstanding the readjustments of reserve requirements made several times in the last few years by the Federal Reserve Board. It can hardly be expected that business will be eager to take advantage of it. If business does not use it, deposits will be increased by the amount named and, of course, reserves go up with them.

The comment has been that it looks like a gesture which probably will have no effect upon business held back by a lack of confidence.

One Sided Law

Probably no measure adopted under the New Deal has given business more concern than the Wagner Labor Relations Act. It is regarded by most employers as a one sided act which is intended to punish and put all the blame upon employers for differences with employees.

The Business Advisory Council organized by the President advances suggestions regarding changes in the law that are worthy of consideration. Apparently the primary principles of the Act are not opposed but the Council suggests an amendment to clarify the right of employees to organize without coercion and the right to choose their own union. Another suggestion is that the employer have the same right now reserved for employees to call upon the services of the National Labor Relations Board. This would seem to be an eminently reasonable request. Labor should recognize the reasonableness of the ideas advanced. While the Board has been criticized for one sided opinions, it appears that under the terms of the law it is required to consider only labor's complaints and whether they are justified. It is a poor law which does not provide full justice to both sides of a controversy.

Cotton Seed Oil from Brazil

Reporting the arrival at the ports of New York and Philadelphia of consignments of cottonseed oil from Brazil consisting of 1,646 drums and 824 drums respectively, the Journal of Commerce says "At the same time it was reported that Brazilian oil for arrival in the latter half of the month had been offered for resale in the trade."

Various estimates are made of the volume of foreign cottonseed oil that already has been contracted for shipment to this country. No large inward move is anticipated for the next several weeks.

Facts Wanted on Prices

The fact finding inquiry on prices asked by Senator Bailey of North Carolina should serve an important purpose. Senator Bailey describes his objective in an article in this issue. Are the prices too high or too low as has been claimed at different times by the President? A fact finding committee should clear up a lot of doubt.

Equally important, as Senator Bailey points out, is knowledge of the things that affect prices. In the United States

(*Continued on page* 48)

Commercial Credit Company

Baltimore

Twenty Sixth Annual Consolidated Financial Report

AS OF DECEMBER 31, 1937

ASSETS

Cash		$ 28,077,827.23
Motor Lien Retail Time Sales Notes	$155,015,564.40	
Motor Lien Wholesale Notes and Acceptances	60,740,756.14	
Industrial Lien Retail Time Sales Notes	57,795,609.16	
Open Accounts, Notes and Factoring Receivables	33,893,956.19	307,445,885.89
Sundry Accounts and Notes Receivable		740,537.05
Customers' Liability on Foreign Drafts and Letters of Credit (Contra)		138,683.77
Repossessions in Companies' possession at depreciated values:		
Motor Cars	$ 145,112.22	
Other than Motor Cars	16,689.83	161,802.05
Investments:		
Sundry Marketable Securities at book value (market value $442,379.50)	$ 414,935.13	
Investment Securities held by American Credit Indemnity Company of New York, at market value	4,775,710.42	5,190,645.55
Deferred Charges:		
Interest and Discount Prepaid, etc.	$ 1,103,024.37	
Unamortized Debt Discount and Expense	820,288.00	1,923,312.37
Furniture and Fixtures		4.00
		$343,678,697.91

LIABILITIES

Unsecured Short Term Notes (Subsidiaries $6,496,155.88)		$171,786,655.88
Accounts Payable:		
Credit Balances of Manufacturers and Selling Agents held by Factoring Subsidiaries	$ 2,164,214.51	
Sundry, including Accruals, Federal and other Taxes	6,123,728.72	8,287,943.23
2¾% Debentures due 1942	$ 35,000,000.00	
3¼% Debentures due 1951	30,000,000.00	65,000,000.00
Contingent Liability on Foreign Drafts and Letters of Credit (Contra)		138,683.77
Contingent Reserves:		
Margin due Customers only when Receivables are collected	$ 6,054,633.01	
Dealers' Participating Loss Reserves	6,268,432.59	12,323,065.60
Reserves for:		
Possible Losses and Contingencies	$ 5,226,991.37	
American Credit Indemnity Company of New York, Reserves required by Insurance Regulations, plus Voluntary Reserves of $500,000	1,122,606.64	
Deferred Income and Charges (unearned)	15,121,208.85	21,470,806.86
Capital Stock and Surplus:		
Minority Interests (Common Stock and Surplus—Subsidiaries)	$ 44,668.00	
Preferred Stock, $100 par value		
499,646 shares authorized—121,948 shares outstanding designated as:		
4¼% Cumulative Convertible	12,194,800.00	
Common Stock, $10 par value:		
(3,000,000 shares authorized—1,840,900 full shares and 1,094 shares of fractional scrip outstanding)	18,419,940.00	
Capital Surplus	$17,964,493.87	
Earned Surplus	16,047,640.70	34,012,134.57
		64,671,542.57
		$343,678,697.91

Summary of Operations

	Year Ended Dec. 31, 1937
Gross Receivables Purchased	$933,854,331.85
Gross Operating Income	$ 33,966,634.46
Sundry Income	700,218.37
Gross Income	$ 34,666,852.83
Operating Expenses:	
Officers, Employes and Agents Salaries, Commissions and special compensation	7,426,642.70
Taxes (except Federal Income and Undistributed Profits)	787,025.19
Management Expenses	6,646,659.03
Reserves for Losses in Excess of Net Losses (Credit)	912,635.55
Net Income before Interest and Discount	$ 20,719,161.46
Interest and Discount Charges	3,781,604.71
Reserve for Federal Income Taxes	2,916,609.59
Net Income from Operations	$ 14,020,947.16
Less Net Income for Minority Interests	4,844.55
Net Income on Capital Stocks of Commercial Credit Company	$ 14,016,102.61
Reserve for Federal Surtax on Undistributed Profits	422,983.50
Net Income credited to Surplus	$ 13,593,119.11

	1937	1936
Interest and Discount Charges—Times Earned	5.47	8.50
After Federal Surtax on Undistributed Profits:		
Net Income per share on 4¼% Cumulative Convertible Preferred Stock outstanding at end of period	$111.46	$97.84
Dividend Requirements on 4¼% Cumulative Convertible Preferred Stock outstanding at end of period—Times earned	26.20	23.02
Net Income per share on Common Stock, including scrip, outstanding at end of period	$7.09	$6.07

Analysis of Earned Surplus

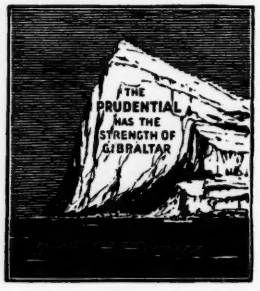
Net Income credited to Surplus	$ 13,593,119.11
Excess Reserves on closed banks returned to Earned Surplus	41,828.22
Total	$ 13,634,947.33
Less dividends paid in cash on:	
4¼% Cumulative Convertible Preferred Stock	518,752.87
Common Stock ($4 and $1.50 extra per share)	10,123,656.50
Transferred to reserve for depreciation of securities to market value (American Credit Indemnity Company of N. Y.)	374,424.38
Furniture and Fixtures written off	359,825.20
Total	$ 11,376,658.95
Net Surplus Credit for period	$ 2,258,288.38
Earned Surplus Balance, beginning of period	13,789,352.32
Earned Surplus Balance, end of period	$ 16,047,640.70

Commercial Credit Company conducts a highly specialized form of commercial banking through the purchase of receivables created by the sale of merchandise from the manufacturer to the consumer. It purchases current open accounts from manufacturers and wholesalers, who collect the accounts as usual, and limit their credit losses. Its subsidiaries, Textile Banking Company, Inc., and Edmund Wright Ginsberg Corporation, New York, offer "Factoring" service, under which they purchase and collect accounts, assuming all credit risk. Its subsidiary, American Credit Indemnity Company of New York offers "Credit Insurance" which reimburses credit losses in excess of an agreed percentage on annual sales, and guarantees specific accounts. The Company specializes in time payment financing of automobiles, refrigerators, heating equipment, radios, Diesel engines, time and labor saving machinery and other articles of a durable nature.

Heirs get cash; partner keeps the business

When one partner dies, disaster to the enterprise is avoided if there is life insurance ready.

See our booklet on this subject



THE PRUDENTIAL
INSURANCE COMPANY OF AMERICA
EDWARD D. DUFFIELD, President
HOME OFFICE, NEWARK, N. J.

"Finance and Kindred Subjects"

Facts Wanted on Prices

(*Continued from page* 46)

there is a vast replacement market which is not being filled although business is eager to fill it. Equipment wears out constantly, supplies are required, houses are needed. If high selling prices for commodities are holding business up, it should be known as well as the effect that high wages may have in making high prices necessary.

The purpose, as the Senator states, is not to punish nor to indulge in incriminations but to help.

Taxing the Tax Exempt

If the plan to tax the income of tax exempt securities is included in the revenue bill to be adopted, it is likely to meet with determined opposition. The Wall Street Journal says "The impost itself would be bad enough, if the additional revenue it yielded tended to persuade Congress that loose purse strings were still all right. But far worse than that would be the bald repudiation by the Government of contracts it has made with individual investors and the wanton destruction by the sovereign Government of contract rights which for more than two decades it has allowed state and local governments to sell with its approval.

Increase in Insurance and Assets

Policy holders and beneficiaries of the New York Life Insurance Company were paid over $191,000,000 in 1937, bringing the total of such payments in 10 years to over two billion dollars. This was announced by Thomas A. Buckner, Chairman of the Board, at the February meeting.

Reporting on the year 1937, Mr. Buckner gave the figures on new life insurance issued during the year of $477,000,000, which was an increase of $26,000,000 over 1936. Assets of the Company at the end of 1937 were $2,520,000,000, having increased $116,000,000 during the year. Government obligations, direct or guaranteed, accounted for $512,000,000, which was an increase in this investment of $72,000,000 over the year before. Twenty per cent of the Company's assets are in this form of security. State, County and Municipal Bonds totaled $254,000,000, while railroad, public utility and industrial bonds totaled $576,000,000. First mortgages on city property aggregated $405,000,000 which is 16% of all assets. Surplus reserves for general contingencies amount to $124,000,000.

Giving More and Getting Less

Class I railways received in 1936 an average of $1.93 for each ton of freight transported. The average ton was carried approximately 198 miles. In 1921 the average haul per ton was 181 miles and the average revenue per ton was $2.31. In the passenger department, the average journey per passenger from 1921 to 1936 increased from 36 to 46 miles while the revenue declined 27 cents per passenger.

Gold Production and Gas Taxes

The American Petroleum Institute says the dollar value of all the gold mined in the United States since 1792 is not as great as the gasoline tax bill paid by motorists in the last 19 years.

American gold mines have yielded $5,249,388,000 in the precious metal. The tax bill the motorist pays on his gasoline, which was intended solely to finance highways, is estimated at over $7,144,584,000. These taxes increase the cost of gasoline about 30% on the average—much more in some states.

NEW YORK LIFE INSURANCE COMPANY

A Mutual Company Founded April 12, 1845 . . . Incorporated in the State of New York . . . 51 Madison Avenue, New York, N.Y.

THOMAS A. BUCKNER, *Chairman of the Board* ALFRED L. AIKEN, *President*

A BRIEF DIGEST OF THE 93rd ANNUAL STATEMENT, DECEMBER 31st, 1937

During the year 1937 the Company paid to policyholders and beneficiaries $191,000,000, bringing the total of such payments for the past ten years to over *two billion dollars* . . . New insurance issued, $477,000,000, an increase of $26,000,000 over 1936 . . .

Insurance in force, $6,770,000,000, a gain of $109,000,000 . . . Included in liabilities is a Special Investment Reserve of $40,000,000, and a Reserve of $39,900,000 for dividends to policyholders in 1938 . . . Surplus for general contingencies, $124,000,000.

ASSETS

Cash on Hand, or in Bank	$64,231,858.43
United States Government, direct, or fully guaranteed Bonds	512,300,999.54
State, County and Municipal Bonds	254,845,789.65
Canadian Bonds	59,771,724.10
Railroad, Public Utility, Industrial and other Bonds	576,334,340.82
Preferred and Guaranteed Stocks	81,644,201.00
Real Estate Owned (Including Home Office)	140,089,034.62
First Mortgage Loans on Real Estate (Including $2,265,334.31 foreclosed liens subject to redemption)	414,284,562.41
Policy Loans	355,265,818.60
Other Assets	61,581,887.19
TOTAL	$2,520,350,216.36

LIABILITIES

Insurance and Annuity Reserve	$2,063,058,950.00
Present Value of Future Instalment Payments	112,255,214.65
Dividends Left with the Company at Interest	107,197,578.67
Other Policy Liabilities	14,915,390.91
Premiums, Interest and Rents Prepaid	11,072,545.41
Miscellaneous Liabilities	2,850,269.51
Special Investment Reserve	40,000,000.00
Reserve for Taxes	4,972,037.23
Reserve for Dividends payable to Policyholders in 1938	39,989,051.00
Surplus funds reserved for general contingencies	124,039,178.98
TOTAL	$2,520,350,216.36

As prescribed by the State of New York, bonds eligible for amortization are carried at their amortized values. Other bonds and guaranteed and preferred stocks are carried at market values as furnished by the National Association of Insurance Commissioners. $36,984,088.90 of securities, included above, are deposited as required by law.

BOARD OF DIRECTORS

ALFRED L. AIKEN
President

JAMES ROWLAND ANGELL
Educational Counsellor of National Broadcasting Company

NATHANIEL F. AYER
Treasurer, Cabot Mfg. Co. (Textiles)

ARTHUR A. BALLANTINE
Lawyer, Root, Clark, Buckner & Ballantine

CORNELIUS N. BLISS
Retired Financier

HENRY BRUÈRE
President, Bowery Savings Bank

MORTIMER N. BUCKNER
Chairman of the Board, The New York Trust Co.

THOMAS A. BUCKNER
Chairman of the Board

NICHOLAS MURRAY BUTLER
President, Columbia University

CHARLES A. CANNON
President, Cannon Mills Co.

GEORGE B. CORTELYOU
Former Secretary of the Treasury of the United States

WILLIAM H. DANFORTH
Chairman of the Board, Ralston-Purina Co.

ROBERT E. DOWLING
President, City Investing Co.

JAMES G. HARBORD
Chairman of the Board, Radio Corporation of America

CHARLES D. HILLES
Resident Manager for New York State, Employers' Liability Assurance Corp.

HALE HOLDEN
Chairman, Southern Pacific Co.

HERBERT HOOVER
Former President of the United States

PERCY H. JOHNSTON
Chairman of the Board, Chemical Bank & Trust Co.

WILLARD V. KING
Retired Banker

GERRISH H. MILLIKEN
President, Deering, Milliken & Co.

EDWARD L. RYERSON, Jr.
Vice-Chairman, Inland Steel Company

ALFRED E. SMITH
President, Empire State, Inc.

J. BARSTOW SMULL
Vice-President, J. H. Winchester & Co., Inc.

PERCY S. STRAUS
President, R. H. Macy & Co., Inc.

INDUSTRIAL NEWS

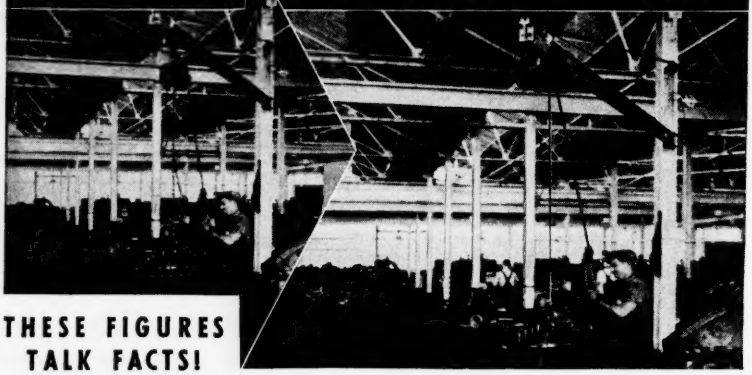
United States Pipe and Foundry Changes

United States Pipe and Foundry Company, Burlington, N. J., announces the following personnel changes, effective January 1, 1938: W. A. Hoffer, formerly Eastern Sales Manager located in Philadelphia, becomes Assistant General Sales Manager with offices at Burlington; H. L. Nelson, formerly Pittsburgh Sales Agent, becomes Eastern Sales Manager, with offices in the Lincoln-Liberty Building, Philadelphia; S. E. Linderman, formerly Washington representative, is appointed Pittsburgh Sales Agent with offices n the Koppers Building, and J. B. McFarland, formerly of the Chicago sales office, is appointed Publicity Representative with offices at Burlington, succeeding R. M. Shaw, Jr., resigned.

Will Handle Hercules Road Rollers

The Hercules Company, Marion, Ohio, announces the appointment of the following distributors to handle Hercules Road Rollers in their respective trade areas: The Blaisdell-Folz Equipment Company, Cincinnati, Ohio; Quinn R. Barton, Inc., Jacksonville, Fla.; Southern Iron and Equipment Company, Atlanta, Ga., and Road Builders Equipment Company, Memphis, Tenn.

Saves $2262.85 a Year ON ONE MACHINE!



THESE FIGURES TALK FACTS!

In this large machine shop, 80 lb. castings were lifted by hand up to the machine tool. Total annual cost of handling by hand — $3456.00, *not including* loss due to lower production and machinist fatigue. P&H engineers recommended a 500-lb. capacity P&H Electric Hoist to operate on a 20-ft. jib over the machine, cutting hoisting time 66%. Total annual cost including cost of hoist, labor, depreciation, upkeep, interest and power — $1193.15. Total annual savings — $2262.85 *on one machine!*

HANDLE IT "Thru the Air" with P&H HOISTS

Just as they did in this shop, P&H Hoists can mean big savings in handling costs in *your* plant. With "thru the air" handling you end manual lifting of loads from 15 pounds to 15 tons — cut production lag, make men *good* workmen 8 hours every day.

Easy to install, low in cost, P&H Hoists are available in any one of several mountings — bolt, lug, trolley, hook or high-lift suspension. Whether you're working with steel or cotton, ice or leather, paper or wire, it will pay you to investigate the possibilities of "thru the air" handling. Its push-button efficiency obsoletes old methods of lifting, lowering or moving of materials.

Free THE ENGINEERING LAYOUT THAT SOLVED THIS PROBLEM!

This drawing shows you, in engineering terms, how P&H Hoists brought new efficiency to this machine shop. It will help you do the same for yours. Send for it now!

USE THIS COUPON TODAY!

Harnischfeger Corporation,
4427 W. National Avenue,
Milwaukee, Wisconsin

Please send me machine shop layout No. 101

Firm Name .....

By ..... Title .....

Address .....

City ..... State .....

HARNISCHFEGER CORPORATION
HOISTS · WELDING ELECTRODES · MOTORS · P&H · CRANES · ELECTRIC CRANES · ARC WELDERS

Manager Crane Oil Sales Section

R. A. Henderson, connected for 20 years with Crane Company, Chicago, Ill., has been appointed Manager of the Oil Sales Section by W. H. Pape, Manager of the Valve and Fitting Department. For many years Mr. Henderson was in charge of the design of steel products to meet the developing conditions of increasing pressures and temperatures, particularly in the oil industry, and has also served as special engineer in the oil sales section.

Fifty Years of Engineering Service

During the current year, Robert W. Hunt Company, Engineers, of Chicago, Ill., will celebrate their Golden Anniversary, having completed fifty years of service to the construction, railroad and manufacturing industries. The company was organized in 1888 by Captain Robert W. Hunt and associates, and since that time has constantly expanded to meet the need of its clients. It maintains an efficient and reliable service for consultation and research, and for the inspection and testing of engineering materials and structures. J. C. Ogden is its president.

Glass Brick in Color

Recognizing a growing need for colored glass brick because of decorative effects, Marks Bros., New York, N. Y., have introduced a series of glass brick in seven colors, in a complete range of sizes. The seven colors produced are light green, dark green, dark brown, rose, amber, blue and crystal, the brick coming in 17 shapes including squares and rectangles, round, and a variety of sets. With a wide assortment of surface designs, the brick are made in sizes of 6″ by 6″, 8″ by 8″, 8″ by 10″, 9¼″ by 9¾″, and in thickness from 1¼″ by 2″.

Trico Fuse Representatives

Trico Fuse Manufacturing Company, Milwaukee, Wis., announces the appointment of the following Southern representatives to handle its complete line of Powder-Packed Renewable Fuses, KANTARK "One-Time" Fuses, COLORTOP Plug Fuses, Special Fuses, KLIPLOK Clamps and Test Clamps, Fuse Fillers and Lubricators: Industrial Power Equipment Company, 1315 Washington Street, Ft. Worth, to cover Texas; Machinery and Equipment Sales Company, 404 St. Paul Street, Baltimore, to cover Maryland; Walter J. Sciutti, 923 Wolf Street, Jacksonville, to cover Florida.

Acquires Electrochemical Processes Company

Through the acquisition of the Electrochemical Processes Company of Youngstown, Ohio, the Blaw-Knox Company of Pittsburgh, Pa., announces its entrance into the production of equipment for the electro-tinning of steel and for other electro-plating processes. The Youngstown company will be operated as the Electrochemical Processes Division of Blaw-Knox Company, in charge of J. S. Nachtman, president of Electrochemical Processes Company, with offices at Groveton, Pa., P. O. Box 1586, Pittsburgh.

Preserve Record of Bathroom Fixtures

At the request of Oglethorpe University in Georgia, Crane Co., Chicago, Ill., is assembling a picture record of how Americans bathed in 1938, the photographs and data to be preserved in a campus crypt at Oglethorpe University which is not to be opened until 8113 A. D. The record will be made up of pictorial sections of newspapers and magazines and will include not only pictures of the latest bathroom fixtures for homes, hospitals and industrial institutions, but will draw on the past for photographs of fixtures. Many old plumbing fixtures are now housed in a museum in the national dispaly room of Crane Co., at Atlantic City, N. J.

Pressure-Treated Piling

The Jackson Lumber Company of Lockhart, Ala., announces a comprehensive expansion of its facilities for the production of poles, timbers and construction lumber, by the addition of pressure-treating plants at Gainesville, Fla.; Macon, Ga.; Franklin, Va., and Elizabethport, N. J. These plants enable the company to supply its products impregnated with creosote. Coincident with the expansion, sales offices have been established at 420 Lexington Avenue, New York; Graham Building, Jacksonville, Fla.; Macon, Ga., and Gainesville, Fla.

(*Continued on page* 52)

THE DOME DIFFUSER

UNIFORM ILLUMINATION ENDS EYE FATIGUE

For work demanding accuracy, the new Dome Diffuser, using bowl-silvered lamp, produces soft illumination to reveal minor details without eyestrain. Part of the light is directed to the ceiling to brighten up the whole interior.

A CHOICE OF MOUNTINGS TO FILL YOUR NEEDS

"In addition to the Hevyduty Threaded Hood shown above, you may have the Goodrich Diskonect, a snap-on, snap-off device, which permits removing reflector and lamp as a unit for easy cleaning. Write for full details."

Sunny Lumens

—the Goodrich Reflexpert

GOODRICH
ELECTRIC COMPANY
OFFICES IN ALL PRINCIPAL CITIES

GENERAL OFFICES AND FACTORY: 2915 N. OAKLEY AVE., CHICAGO, ILL.

ALLIGATOR

TRADE MARK REG. U.S. PAT. OFFICE

STEEL BELT LACING

The smooth, durable hinged joint of Alligator Steel Belt Lacing is the most universally used of all belt lacings. Clinched teeth compress belt ends firmly, reducing destructive internal friction and ply separation. Twelve sizes in steel, "Monel Metal," and alloys for belts up to ⅝ in. Standard boxes, "Handy Packages," and long lengths.

Sold at wholesale and retail throughout the world.

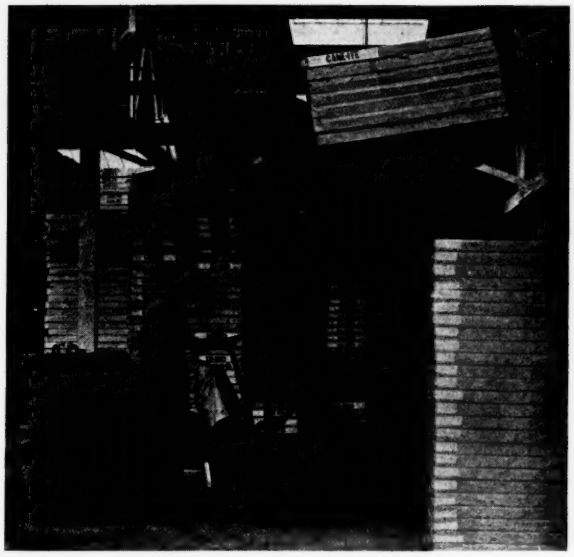
Sole Manufacturers

FLEXIBLE STEEL LACING CO.
4690 Lexington Street, Chicago

In England at 185 Finsbury Pavement, London, E.C.2

REG. U. S. PAT. OFFICE

NO FALSE MOTIONS



WITH TOWMOTOR LIFT TRUCKS

One of the many outstanding advantages of the Towmotor Lift Truck is its unique smoothness of operation that eliminates false motions. It puts the material exactly where you want it—all at once.

Rehandling, juggling and resetting costs time and money. Why waste it when you can get smoother, more concentrated power with steadier, more precise control and greater maneuverability with Towmotors? This is one of the many reasons why Towmotors show the lowest cost per year and per ton moved. We welcome your requests for bulletin with detailed specifications.

TOWMOTOR COMPANY
1237 E. 152nd Street, Cleveland, Ohio

INDUSTRIAL NEWS

(*Continued from page 50*)

Southern Studebaker Dealers

Southern dealers appointed during January by the Studebaker Corporation of South Bend, Ind., include the following: Union Motors, El Dorado, Ark.; Harry Miller, Inc., Miami, Fla.; Central Auto Sales, Inc., Monroe, La.; Melito Sales and Service, New Orleans, La.; Charlotte Wagon and Automobile Company, Charlotte, N. C.; John A. Brennen, Alvin, Tex., and Deckle Motor Company, Pampa, Tex.

Sawmill Transmission Belt

Designed for installation on tractor and small steam sawmills, a new transmission belt is announced by The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J. Two Manhattan sawmill feed belts are used on a machine—one to pull the carriage and log through the saw, and the other to return the carriage for the next cut.

Koppers Company Promotes Morton

Allen W. Morton, general manager of Koppers' American Hammered Piston Ring Division at Baltimore, Md., has been elected vice president of the Koppers Company, Pittsburgh, Pa., according to announcement by T. J. Tierney, president.

Commercial Credit Company Report

The twenty-sixth annual consolidated financial report of Commercial Credit Company, Baltimore, as of December 31, 1937, shows a gross income of $34,666,852 and a net income from operations of $14,020,947. Net income credited to surplus was $13,593,119, while the net surplus credit for the period was $2,258,288.

The earned surplus balance at the beginning of the period was $13,789,352, and at the end of the period, $16,047,640.

Marshall Field Appointment

Luther H. Hodges of Spray, N. C., for the past two years production manager of the Manufacturing Division of Marshall Field & Company, has been appointed general manager of the Manufacturing Division, according to announcement by H. M. McBain, first vice president of the company. His offices will be at 200 Madison Avenue, New York, N. Y.

Brooks Equipment and Manufacturing Company

To improve their position in the construction, quarry and industrial fields, the Brooks-Payne-Osborne Equipment Company and the Day Pulverizer Company, of Knoxville, Tenn., have consolidated and formed the Brooks Equipment and Manufacturing Company. In the merger there will be no change in personnel nor in the lines of manufacture and distribution. Offices, factory and warehouses are at 408-10 Davenport Road, Knoxville.

Thomas Foundries, Incorporated

The Thomas Grate Bar Company, Birmingham, Ala., has changed its name to Thomas Foundries, Inc., in order to serve industry more effectively with specialized grades of alloyed and plain gray iron for various purposes. It will continue to produce improved types of grate bars and grate equipment and will increase its production of plain and alloyed cast irons as well as special compositions such as Ni-Resist and Ni-Hard. Officers of the old company will serve the new one. They are: E. A. Thomas, president, and W. D. Thomas, secretary-treasurer.

Paepcke on Stevens Hotel Board

Walter P. Paepcke, president of Container Corporation of America, Chicago, Ill., has been named to the directorate of the Stevens Hotel in that city. For a number of years Mr. Paepcke has been prominently identified with several Chicago financial, charitable, and associational activities.

Republic Steel Appointments

Carl C. Brown, district sales manager of Republic Steel Corporation at Birmingham, Ala., since the merger with Gulf States Steel Company last year, has been named assistant manager of sales of the wire division with headquarters in Birmingham. J. R. Fraine has been appointed assistant manager of sales of the wire division for the northern territory, with offices in Chicago. R. J. Working, district sales manager of Republic at Birmingham prior to the Gulf States merger, resumes the district managership.

Changes in Baldor Tool Grinder

The Baldor Electric Company, St. Louis, Mo., announces several notable changes in the construction of the Baldor Carbide Tool Grinder, including as standard equipment a protector type tool support which indicates the angle at which the tool is being ground. Also, the tool rest tables are now adjustable so that they may be moved toward the wheel, thus providing for wheel wear. The grinder is supplied with a Diamond Wheel Dresser especially adapted to it.

National Gypsum Buys Cement Company

National Gypsum Company of Buffalo, N. Y., announces the purchase of The Best Brothers Keene's Cement Company, whose plant operations are located at their deposits near Medicine Lodge, Kansas. The transaction was made by an exchange of National's common stock for capital stock of Best Brothers Keene's Cement Company, and in the transfer National acquires several important patents covering the manufacturer of Keene's Cement, paper fillers and processing for certain industrial uses. The properties are modernly equipped for low cost mining and manufacture.

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Model Land Company
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CONDENSED STATEMENT
SHOWING THE CONDITION OF THE

Fidelity & Guaranty Fire Corp.
Baltimore, Md.

DECEMBER 31, 1937

Total income during the year	$4,480,681.48
Total disbursements during the year	3,848,807.55
Total admitted assets	6,601,177.39
Total liabilities except capital	$4,042,678.13
Capital actually paid up in cash $1,000,000.00	
Surplus over all liabilities 1,558,499.26	
Surplus as to policy holders..	2,558,499.26
Total liabilities	$6,601,177.39
Net premiums in United States December 31, 1937....	$6,466,825.45
Risks written in Maryland during 1937	38,522,560.00
Premiums on Maryland business in 1937	177,526.21
Losses paid in Maryland in 1937	53,831.58
Losses incurred in Maryland in 1937	53,532.58

STATE OF MARYLAND
Office of the
STATE INSURANCE DEPARTMENT
Baltimore, Md., March 1, 1938

I hereby Certify, That the above is a true abstract, taken from the Annual Statement of the FIDELITY AND GUARANTY FIRE CORPORATION, BALTIMORE, MD., for the year ending December 31, 1937, now on file in this Department.

W. S. HANNA,
Insurance Commissioner.

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Its application to industrial processes has enabled manufacturers to widen their markets with improved products made at lower cost.

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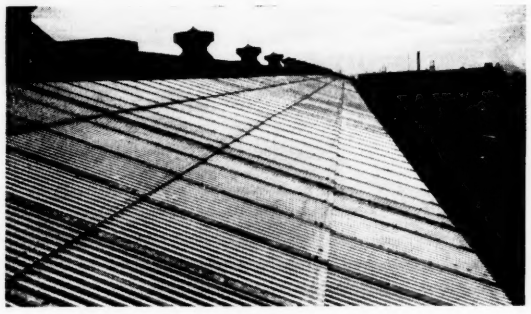

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Also used with excellent results on sidewalls, marquises, canopies and wherever daylight is needed.

Our Engineering Service Department can aid you on your skylighting problems. Write or wire.

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Both are highly resistant to weather action, and like marble or granite, polish naturally. Experience shows that they will hold their polish substantially longer than any marble commercially used.

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Sales Offices in Principal Cities

Suggestions for the Future of the Cotton Industry

(*Continued from page* 31)

tiring economically unproductive cotton lands. It should be noted at this point that the westward trend of cotton has been largely occasioned by the high percentage of abandoned acreage, due chiefly to deficient moisture and the depredations of the boll weevil which two latter agencies have been known to reduce a state's total productive cotton acreage by as much as 40 percent. Earlier maturing varieties of cotton were planted to overcome the difficulty, but the staple length suffered resulting in a decline of income. The labor that might possibly be displaced by retiring any perceptable area of cotton lands would be absorbed in part by the replacement crops, and any surplus will find an outlet in the demand from industrial development which already accounts for more than half the number of gainfully employed people in agriculture. Apart from the substitute crops and farming practices, the advent of manufacturing paper from pine should encourage reforestation as an income producer and soil builder for much of the land found unprofitable for other crops. In addition, it is stated that parts of the Southern states are well adapted for the growth of grapes and tung trees, while milk weed and similar cotton substitutes together with other baste fibre plants could well be encouraged for the production of fibres to be manufactured into cheap fabrics for industrial use to replace the cotton fabrics which at present are too high in price to permit wide usage.

Perhaps the greatest opportunity for American cotton lies in the development of a better grade, longer staple, heavier yielding plant and in improved ginning methods, which latter should perhaps be assumed to be included in the classification of grade. While grade admittedly varies from year to year and with countless other factors particularly as far as color is concerned, it is also dependent to a great extent upon its appearance after ginning and the presence of foreign matter such as leaf, shale, motes and sand will materially lower the grade, so that both the actual ginning operation and subsequent care are all important. In the latter respect the use of a cotton fabric in place of jute for bagging, should be given careful thought even though its weight reduction may necessitate an increase of lint and the general cost be slightly greater. As far as ginning is concerned, results vary with the care exercised and also with the equipment, some gins possessing elaborate cleaning apparatus. According to reports however, present ginning leaves much to be desired, and it is probable that if the claims made on its behalf are substantiated by investigation, the new cotton gin invented by Frank Watson with its centrifugal principle will be a decisive factor in reducing costs. It is said that samples taken from the same lot of seed cotton and ginned on the new and the old type of gin bear little resemblance because of the extraordinarily clean appearance of the former. Arrangements have now been made for the manufacture of 1,000 of these gins which are claimed to have the approval of the Secretary of Agriculture.

Because the staple length of American cotton already is good is no justification for it not being longer. From 1928 to 1934 approximately 37.5 percent of the annual crop was of 7/8 and 29/32 inch; but in 1935 and 1936, the percentage was 25.3 and 21.6 respectively. This apparent decline however, is due to the increased quantity of longer staple lengths, attributable in some measure to the high percentage of long staple cotton grown in the irrigated sections. In this connection and in justification to the irrigated areas where the per acre cost of lint is so high, it should be noted that as the staple length increases, the proportion of seed cotton to the bale also increases materially. In other words, short staple seed cotton weighs far heavier than does the long staple. Production of a high grade long stable cotton will do more, perhaps, than any other single thing to command a higher price and drive the short staple foreign producer from at least increasing his acreage.

The improvement during recent years of the quality and staple length of cotton which this year has suffered a serious set-back, has been brought about principally by improved varieties of seed planted; but there still remains a fertile field so far as general cultivation is concerned, the tendency being to ignore the advice of agricultural scientists who are constantly at work to find an improved variety of cotton plant—improved not only in quality and staple but also in yield and its imperviousness to climatic and insect damage. The success of this proceedure was illustrated by an article in the September 1937 issue of the MANUFACTURERS RECORD, "One Variety Cotton" by A. G. Swint. At the present time there are large areas of the cotton producing states in which cottons of very short staple are grown and though sections are more or less arid, there is ample evidence that longer staple varieties can be produced. Furthermore, there is reason to believe that given the opportunity and means, plant breeders could develop varieties of upland and American Egyptian types that would ultimately make it unnecessary to import the present annual average of 100,000 bales of Egyptian cotton with a corresponding approximate valuation of $10,000,000.

Finally, there is the matter of reducing actual production costs. In this sphere of operations, it is essential that a mechanised form of cultivation and harvesting which will effect a substantial saving, be brought to fruition and made generally available as quickly as possible. The Rust picker recently completed and scheduled for commercial production, is said to have effected a saving of $1,439.06 in the picking of 121 bales or at an average cost of 11 cents per 100 pounds and gathers as much as 13 bales in a day. It is also equipped to work at night.

In summarization, it is submitted that it is the obligation of our government to further the principles outlined in the foregoing as long as subsidization is in force. It is also suggested that these proposals or recommendations might serve as a base upon which provisions of a mandatory nature could be incorporated for recipients of cotton subsidies to insure a reasonable certainty of the industry returning to normalcy.

Cotton Costs in the Various Sections of the South

	Thousand acres harvested	Production of 500 pound gross weight lint bales	Average yield of lint per acre	Gross cost per acre: Prepare and plant	Cultivate and hoe	Picking, snapping and hauling to gin and market	Fertilizer and manure	Seed	Ginning	Miscellaneous	Land rent	Total	Credit per acre for cotton seed	Net cost of Lint: Per pound Including rent	Per pound Excluding rent	Per acre Including rent	Per acre Excluding rent
Coastal Plain of Ga. & S. C.	2,381	890	187	4.73	7.40	5.10	5.45	1.13	1.62	4.83	3.90	34.16	4.67	24.49	25.59	15.8	13.7
Piedmont of N. C. & S. C.	1,913	892	233	5.68	7.57	7.06	6.06	1.20	1.99	4.81	6.06	40.43	5.89	34.54	24.48	14.8	12.2
River bottom areas of the Miss. Ark., & Red rivers	3,560	1,697	238	4.30	9.81	8.19	1.13	1.21	2.90	5.36	7.89	40.79	6.03	34.76	26 87	14.6	11.3
Western hilly area (Texas)	3.325	928	140	4.00	7.01	4.59	1.34	1.06	1.57	3.90	4.19	27.66	3.01	24.65	20.46	17.6	14.6
Texas Gulf Coast Prairie & Black prairie	6,823	2,062	150	2.96	5.22	5.10	.59	1.03	1.85	3.48	5.38	25.61	3.36	22.25	16.87	14.8	11.2
Western dry area of Texas	5,592	1,508	135	2.86	3.46	4.82	.13	.92	2.00	2.79	3.67	20.65	2.79	17.86	14.19	13.2	10.5
Irrigated areas (Calif., Ariz., N. M. & Texas)	705	472	335	7.60	6.73	12.71	.64	1.20	4.79	10.96	13.71	58.34	7.76	50.58	36.87	15.1	11.0

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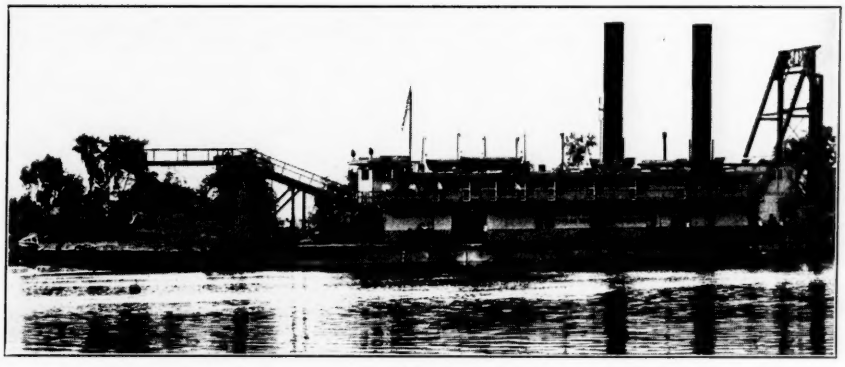

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Gray Iron Meeting

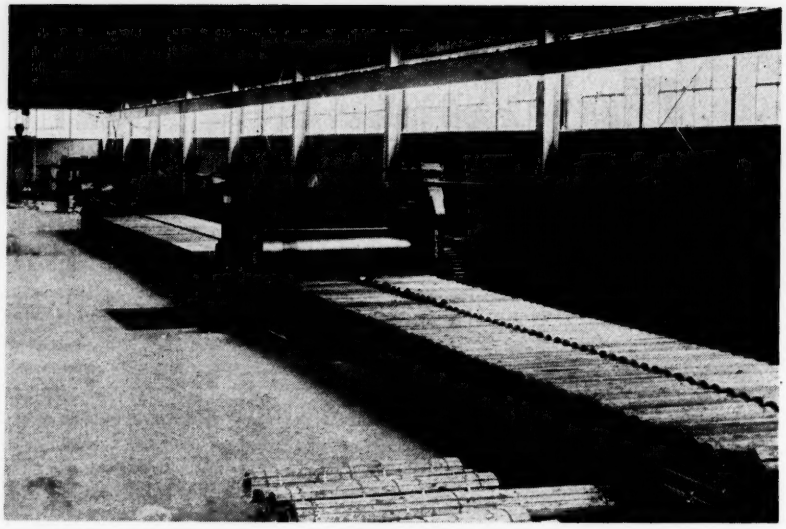
Gray iron foundry executives plan an industry meeting under the auspices of the Gray Iron Founders' Society, Inc. at the Hotel Statler in Buffalo, New York, on Friday, March 25th.

The morning program contains speakers of national reputation. After the luncheon, at which visiting foundry executives will be entertained by the Gray Iron Founders' Society, there will be an afternoon meeting of the Industry at which matters of exclusive gray iron foundry interest will be discussed and the election of directors of the Society for the coming year held.

Arrangements are being made to take the visitors to Niagara Falls on the Saturday morning following. This will afford an opportunity for a second honeymoon. Foundrymen are expected from far and near to enjoy the renewal of acquaintance and discuss problems of mutual interest.

The officers of the Society are:

President—Peter E. Rentschler, President, Hamilton Foundry & Machine Co., Hamilton, O. Vice President—R. E. Kucher, Vice President, Olympic Foundry Co., Seattle, Washington. Secretary—J. H. Pohlman, Vice President, Pohlman Foundry Co., Inc., Buffalo, N. Y. Treasurer—W. L. Seelbach, Secretary-Treasurer, Forest City Foundries Co., Cleveland, O.



The sheet lead rolling mill of the Evans Metal Company in Atlanta, Ga.

New Plant for Manufacturing Lead in the South

The Evans Metal Company, which is claimed to be the second lead manufacturing concern in the South, recently started operation of their plant on a ten acre tract at Atlanta, Georgia.

Equipped with sheet lead rolling mill specially built by the E. W. Bliss Co., Salem, Ohio, and 1,000 ton capacity lead pipe extrustion press, the company is already manufacturing sheet lead and lead pipe for the building trade. In addition, there is a demand from the chemical industry for mixed metals. Raw materials are obtained principally from the lead refineries at Omaha and St. Louis.

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This applies to field as well as shop built equipment

Write us for information and quotations

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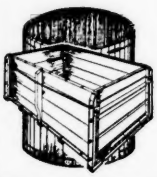

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With U-Bar Line Posts That

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ANCHOR'S U-Bar line posts are 50% stronger, size for size and weight for weight, than the commonly used pipe, T-Bar and L-Bar posts. Made of high carbon steel (.45 to .75 carbon) and heavily galvanized by the hot-dip spelter method, U-Bar line posts are another *extra* advantage for Anchor Fence owners.

As permanent as the U-Bar line posts is Anchor's exclusive method of keeping them fast in the ground with deep-driven "anchors." In hard ground or soft . . . sandy or rocky . . . frost and thaws, stress and strain won't weaken them. That's why an Anchor Fence won't come loose, won't get out of line.

And to complete the rugged protection of Anchor Fences are ANCHOR GATES. The frames of Anchor Gates are of *square* tubular steel—for strength. They are inseparably butt-welded—for rigidity and permanence. Disfiguring diagonal braces are unnecessary; Anchor Gates won't sag, drag or warp. They always swing free and lock tight. Like all the features of Anchor Fences, they can "stand the rap" of time and hard knocks. Anchor Fences are made in many styles for every purpose—industrial, residential and institutional. Nationwide Erecting Service insures efficient installation.

Get This Free Book—Handy 48-page illustrated reference book tells you quickly all you need know about fencing—helps you select the type fences and gates to guard your plant best, look better, last longer, save needless upkeep. Busy executives need this book. Write for your **free** copy today.

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Name.....Title.....

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Address.....

A New Industry is Started in North Carolina

A new plant has been built at Bowditch, six miles east of Burnsville, N. C., by the Tri-State Development Corp., a concern newly organized for utilizing the feldspar and mica deposits of western North Carolina. Metal clad construction over frame, the factory proper is a three-story structure for storage of raw materials, a processing room and a large warehouse.

All raw materials and chemical products, as well as cans and other shipping containers are handled by elevators and conveyors especially designed for each particular purpose. A 16-cubic foot tilting mixer compounds 1,250 pounds of cleanser every seven minutes. Surge tanks make the operation continuous.

A mixed product is dumped automatically into 45-ton storage bins, from which it is fed into packing machines capable of handling 120 cans a minute. Conveyors feed cans to the packers, carry away the finished cans and take the cased goods into the warehouse.

Ground feldspar, the basis of the cleansing products, is brought by overhead conveyor from the adjoining Feldspar Milling plant to the Tri-State storage facilities, which include space for 90 tons of ground feldspar and several carloads of chemicals, as well as cans, containers and barrels.

The Tri-State Development Corp., plant near Burnsville, N. C.

The plant machinery was designed and installed by the Small Manufacturing Co., of St. Louis, Mo. C. S. Noble is president and Rudolph Glatly, vice-president in charge of operations.

Four mines operated under the Tri-State mining division are equipped with Ingersoll-Rand mining machinery.

American Chemical Society to Meet at Dallas

The semi-annual meeting of the American Chemical Society will be held at Dallas, Texas, from April 18 to 21, at which time the chemistry of the Southwest will be featured. In addition to the 35 scientific sessions there are five special symposia scheduled. Among the programs being arranged by the various divisions are included cellulose, gas and fuel, paints and varnishes, petroleum, sugar, etc.

The Francis P. Garvan gold medal will be presented to Dr. Emma P. Carr of Mt. Holyoke College and the $1,000 A. C. S. prize in pure chemistry to an American chemist under 35 years of age will be announced during the meeting.

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Structural Steel for all Industrial Structures, Buildings and Bridges.
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STRUCTURAL STEEL
For Bridges, Buildings and All Industrial Purposes
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Complete Stock Shapes, Plates, Sheets and Bars for Immediate Shipment
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FILTER GRAVEL
Washed Sand and Gravel for Concrete Roads and Buildings
Filter Gravel, all sizes—Building Bricks
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SHIMER SUCCESS PLANING MACHINE KNIVES AND BITS,

Surfacing Knives and many Knives of smaller proportions for special duty in wood cutting. It will be to your advantage to look into this feature of our service. Our prices, too, are very attractive if you take in consideration their extra wear.

Samuel J. Shimer & Sons, Inc.
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and
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WOOD PRESERVERS SINCE 1878
EPPINGER & RUSSELL CO.
84 Eighth Ave., New York City

Selection of Pulverized Coal Equipment

(*Continued from page 44*)

furnace, in such a way as to produce, and maintain, ignition of the coal and to so produce the most effective mixing of coal and air as to obtain the most complete combustion of the fuel. The function of the pulverizer is to deliver to the burners the required quantity of coal, pulverized to the proper fineness. The pulverizer may affect the action in the furnace due to the amount of primary air that is delivered with the coal to the burner.

It is necessary not only to obtain combustion, but to obtain combustion which is as complete as possible. Burners can effect completeness of combustion thru their ability to produce quick initial ignition and to produce proper mixing of coal with air and distribution in the furnace. Beyond that point completeness of combustion is dependent upon furnace design. Time is required to burn coal particles. The higher the rate of heat release or, the smaller the furnace for the amount of coal to be burned, the less time the coal particles are in the furnace. Consequently combustion is less complete and loss due to unburned combustible material is greater.

For a given furnace, if a curve is plotted of combustible loss against the rate of heat release it will be found that the curve starts at a high point, decreases to a minimum at some one rate of heat release and then increases in amount with increase in heat release. These curves will be different for different types of furnaces. The curve will be lower for all refractory furnaces than for completely water cooled furnaces. Also the minimum point of loss will occur with a lower heat release with an all-refractory furnace than with completely water cooled furnace. This is an item to be given consideration in furnace design.

Reference was made previously to the degree of fineness to which it was desirable to grind various kinds of coal. The reason for grinding a coal to a given degree of fineness is in order that the unburned combustible will be at an economic minimum. It is unnecessary to grind high volatile bituminous coals as finely as low volatile bituminous coals. The gases from the high volatile coals distill off very rapidly and start to burn immediately upon entering the furnace. These gases burn very rapidly and there is less carbon left to be burned during the travel of the particles thru the furnace. If high volatile coals were pulverized to the same degree of fineness as low volatile coals and burned in the same furnace, less unburned carbon loss could be expected with the high volatile coals. Free burning coals need to be ground still less finely since the carbon which is left after the volatile is distilled off, burns more rapidly than with other types of coals. Power is wasted when coal is pulverized finer than necessary.

Load Characteristics

Character of load is to be considered in selection of powdered coal equipment. Some types of powdered coal equipment are subject to lag and some types can operate successfully only within certain ranges of load. If the load on the boiler is expected to change frequently, and vary within wide limits, it is necessary to have powdered coal equipment which can respond quickly and can meet these quickly changing load conditions. If a wide range of load is to be encountered it is necessary to have powdered coal equipment which not only has sufficient capacity for the maximum load expected, but which also has the ability to feed and pulverize the small amount of coal required for the low load, to deliver this to the burner and furnace with the small amount of air required and the equipment must be so designed that stable ignition can be maintained in the furnace. The ability of the pulverized coal equipment to deliver coal to the burner with the least possible amount of primary air is a factor which determines the minimum load that can be carried on a boiler with stable firing in the furnace. In this connection and for the benefit of those who are interested in the operation of powdered coal equipment, it should be pointed out that an additional factor in successfully operating at very low loads, is to carry the least possible draft in the furnaces.

In conclusion it is desired to emphasize the necessity for having sufficient capacity in pulverized coal equipment to meet any possible condition that might occur in the operation of the plant. Provision should be made for the lowest grindability coal, for the wettest coal, and for the lowest heat value coal that can reasonably be expected to be used in the plant. These are the first and most important considerations. If these considerations are properly covered in selection of equipment, most of the problems in successful operation of the plant will have been solved.

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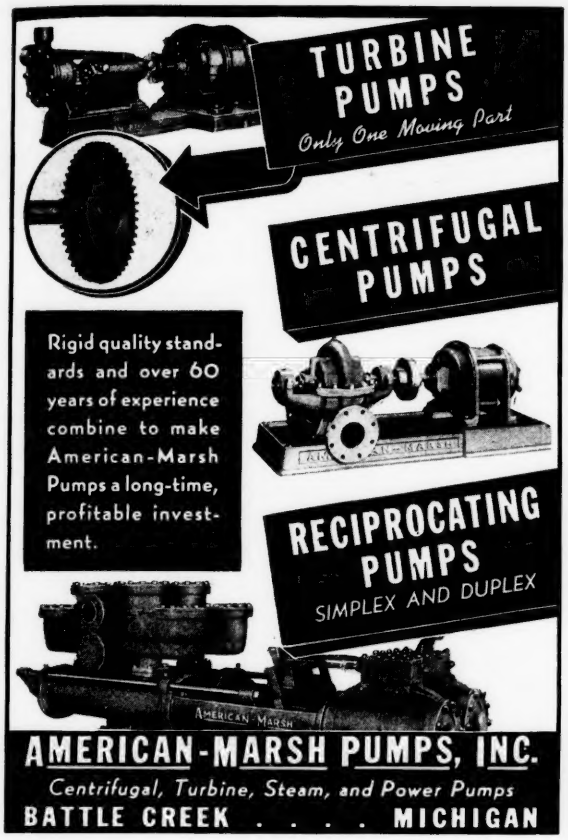
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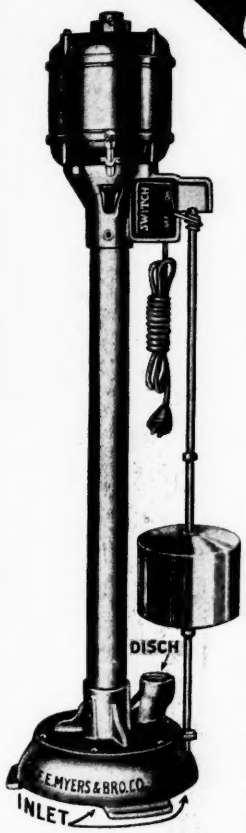

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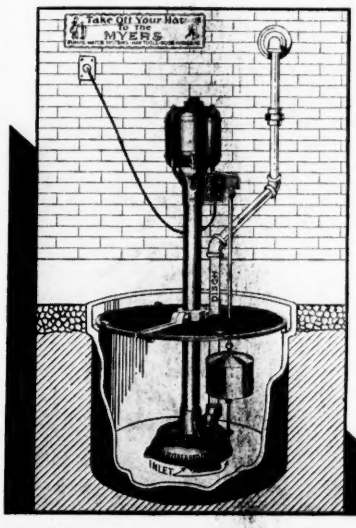

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Facts Needed About Prices

(*Continued from page* 28)

good business can possibly suffer from having the truth known on this subject of prices, and it should also be said that one way to bring about the reduction of the enormous expenditures of the Government is for the Government to get the facts and give them to the people. I agree that the Government is spending enormously. I think this enormous expenditure has a great deal to do with prices, but if we are to investigate prices, we must investigate the whole field in order to get the facts in true perspective.

My thought is to encourage business, but I would not encourage any business that is charging more than is fair or that is indulging in any practices which are not ethical. In order that the fair businesses may be protected now against a general attack, their fairness should be shown to the people.

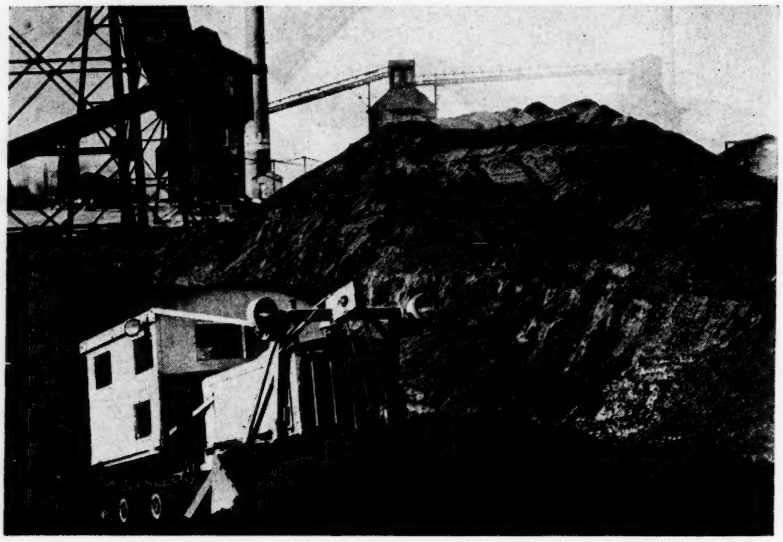
Lighter Transportation

Aluminum continued to lighten the burden of transportation in 1937, the Aluminum Company of America reports, citing New York Central's use of the metal in 40 engine cabs, and the Union Pacific's order for 40 aluminum coaches, five dining and five dormitory cars.

Bulldozer Cuts Cost of Piling Coal

A 15-ton tractor and bulldozer was recently utilized to extend the piling area for steam coal at the Bethlehem Plant of the Bethlehem Steel Company. With the aid of a platform the bulldozer is also used to reload the coal for consumption. The bulldozer, long standard equipment in earth moving, does the job at about one-fourth of what it would cost to do the work with a traveling crane.

While the bulldozer has been utilized chiefly in handling barley-size anthracite, which is the Bethlehem Plant's main source of steam coal, experience has indicated that it can be applied to piling coking-size bituminous coal with equal efficiency. Under average conditions the bulldozer is capable of piling or loading barley-size anthracite at the rate of about 80 tons an hour.



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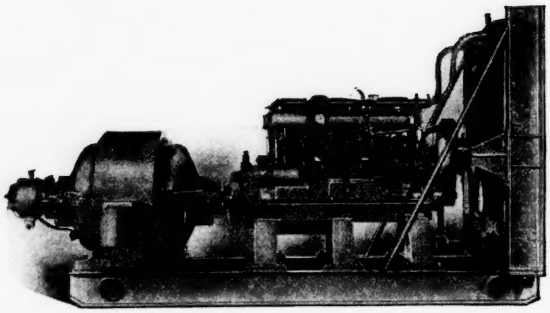

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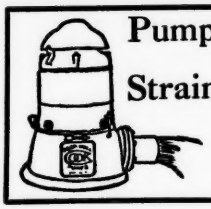

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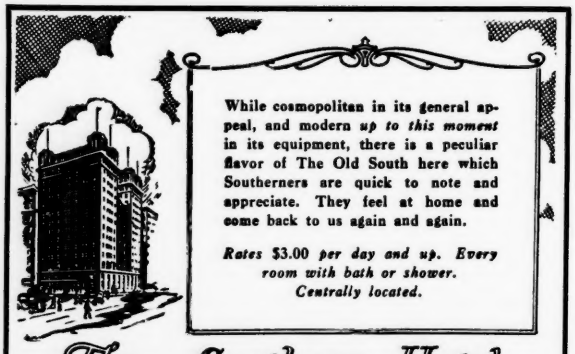

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The agriculture and agricultural interests of the United States are now prominent in the discussions of our National Law Makers as never before. The situation and outlook for the American farmer command the attention of the Public Press in every part of our country to an unusual degree.

In his second Inaugural Address, January, 1937, President Roosevelt stated that one-third of the population of the United States is ill-fed, ill-clothed and ill-housed. No doubt some such conditions exist in every State in the Union. Much is being written about the increasing rate of farm tenancy and share cropping in many or most of our states as well as the evils resulting therefrom and adverse social conditions often growing out of these.

The Southeastern Council has published a Record of Conference, held at Atlanta, March 9-10, 1937, in which Southern men recorded their views of current problems, particularly relating to the agricultural situation. The Conference adopted a series of resolutions, the substance, in part, of which may be stated as follows:

"Be it resolved that it is the desire of the Council to closely cooperate with Federal, State, County, local, civic and economic groups for agricultural progress, and; Be it further resolved that the Council solicits the support and sympathetic understanding of its aims and purposes by these agencies."

"Resolved, that the Secretary of Agriculture be requested to have an authority on farm tenancy, its causes, effects, and remedies; prepare a brief article each week during the next twelve months; and that the Secretary request newspapers and farm journals to feature these articles. Resolved, further, that Chambers of Commerce be asked to have a study made of farm tenancy in their trade areas by their Agricultural and Banking or Industrial Committees, in order that business interests of the cities and towns may have a correct understanding of the low buying power of many rural people under existing conditions."

"We recommend the adoption of the slogan:

"THE SOUTH WILL COME INTO ITS OWN WHEN ITS FIELDS ARE GREEN IN WINTER."

"We further recommend where Winter legumes are not practical or not used that every effort be made to have a green winter cover crop of small grain on every cultivated acre. These changes, we believe, will rebuild Southern agriculture."

The Council hopes that each Southeastern state will inaugurate a state-wide movement through which each county will make its own survey and organize to carry out its own plans to raise the standards, spendable income and general welfare of tenant farmers and share croppers. The survey and resulting program, we believe, can be arranged best by calling together the County Agricultural Agent and the community leaders, including bankers, merchants, landowners, educators, parent-teacher association leaders, share croppers, tenant farmers, and men and women generally of the county who are willing to cooperate in this laudable movement.

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2. The substitution of soil-building and erosion-preventing crops (usually legumes) for soil depleting crops.
3. Extensive adoption of animal husbandry.
4. The wide adoption of good forestry practice as is being recommended and demonstrated by Federal and State Departments of Forestry.

The Council hopes that all groups of citizens, men and women, in every county in our Southeastern states will organize and cooperate in furtherance of all or any part of the foregoing program for the general welfare of our country.

SOUTHEASTERN COUNCIL,
C. F. HUHLEIN, *President.*

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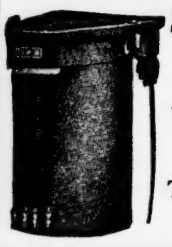

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